April 7, 1962
Vol. 162 — No. 14

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

Two United Telephone Co. of Pa. operators are credited with furnishing clues that led to the arrest recently of two men accused of numerous paystation robberies. Alerted by alarms installed in the Chambersburg exchange, Operators Priscilla Wisocki (left) and Wilma Keyser notified state police who captured the men. Troopers are Stephen Rendish (left) and Robert Derwin.

Circulation This Issue
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MANAGEMENT · PLANT · TRAFFIC · COMMERCIAL · LEGAL · ACCOUNTING

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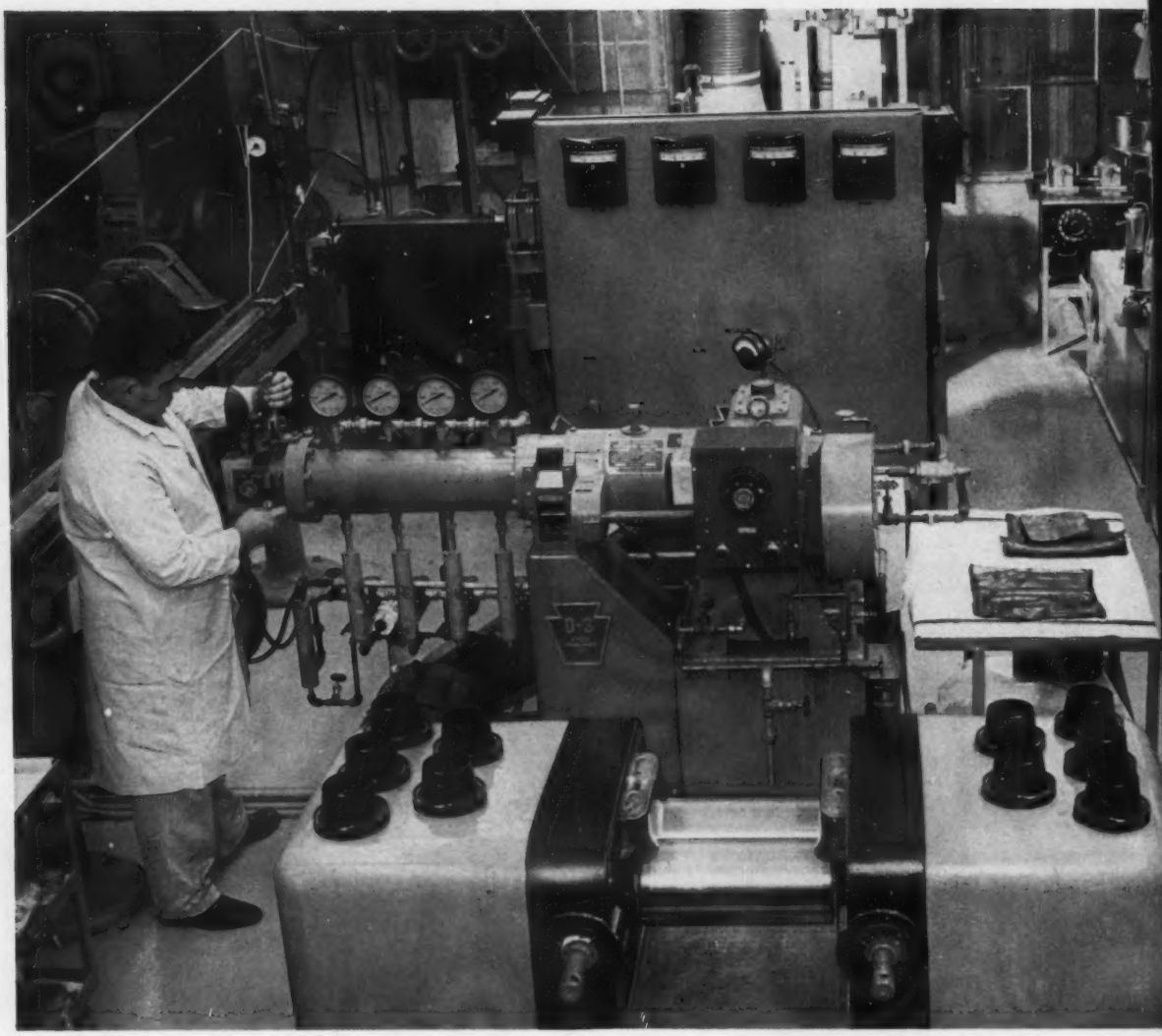
TELECOMMUNICATION



Product Dependability...how it is engineered into Phelps Dodge telephone wire & cable

A comprehensive research and development program that carefully appraises cable designs and components is essential to true product dependability. At Phelps Dodge, a fully-staffed, modern laboratory is maintained for this purpose. Every aspect, from raw materials to physical and electrical characteristics, is constantly evaluated to seek new and better methods of improving basic product components. This concentration on the research and development phase of product engineering means new and better techniques which will lead to longer service life and lower maintenance cost.

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CORPORATION • 300 PARK AVENUE, NEW YORK 22, N. Y.

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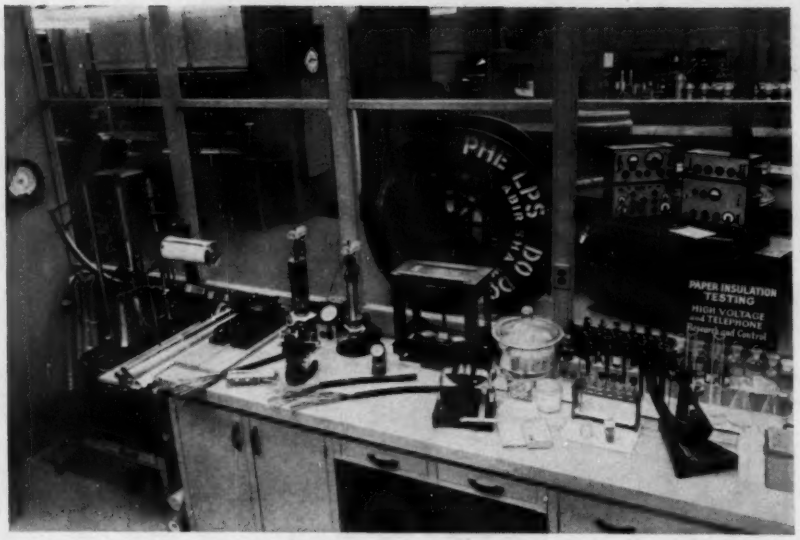
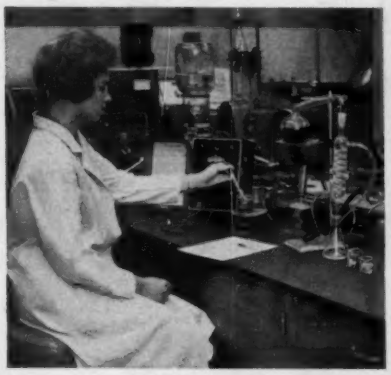
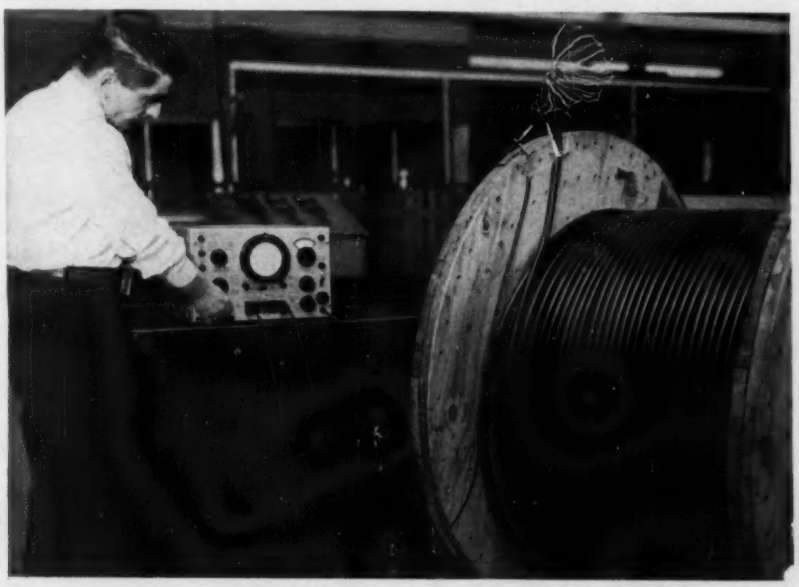
Key step in Phelps Dodge research and development is a pilot plant operation. Here insulated wire is manufactured under controlled conditions to check the suitability of constructions for mass production.



Phelps Dodge's modern Communications Cable Laboratory, shown here, can measure cable characteristics in any communications range from 300 to 3000 cycle voice to 10 kilomegacycle microwave.



Thorough analysis of insulation materials is made by chemical tests (left) and the use of instruments such as the infrared spectrometer (right) which detects the presence of chemical compounds by measuring the absorption of energy versus the specific infrared wavelengths.



Sweep frequency measuring test set is used by Phelps Dodge technician for rapid assurance of uniform telephone cable impedance and attenuation over the voice frequency band.

when you buy an AE dial system,

you meet your needs today...

tomorrow... for years to come!

Are you planning to convert to dial? If so, you're probably concerned about your future switching needs. And rightly so! The system you buy today may have to trunk into different types of equipment and provide new services tomorrow...

AE dial equipment is more than a match for the future. Simple circuits and unitized construction permit it to meet any future demands, simply and economically. It always has! If you'd like to have further details, contact your AE representative. He can show you how the modern features of our dial equipment will be important to you tomorrow. To contact him, write Automatic Electric Sales Corporation, Northlake, Ill. Or call 345-7111.

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FLASHES AND PLUGS

SCREENING PROCESS. A philosophy professor told his class that his lecture for the day would be on liars. He then asked how many had read the 25th chapter of the text.

Nearly every student raised his hand.

The professor beamed as he said: "Good. You are the group to whom I wish to speak. There is no 25th chapter."

•

NUMBERS-CONSCIOUS SUBSCRIBER. Northern Ohio Telephone Co.'s "Lines" reports an installation request that calls for a certain amount of tact on the part of the customer service department.

A man came in to arrange for telephone service—just a routine request, only he wanted the company to make sure the number 13 was omitted from his dial.

•

HORSEY HORSE TRADER. From Canoga Park, Cal. comes the story of a rider and a faithful horse, who not only plodded the bridle path together, but shared the same telephone booth.

According to the UPI, the circumstances are a bit unusual. It seems, the man, a carpenter, rides in leisure moments, and recently mixed in a bit of socializing, too, while out with the horse. He then took the mount with him to make a telephone call for the purpose of selling the animal, and while telephoning, attracted the attention of people at a nearby market.

As the rider stood at the telephone, the horse did not remain a disinterested party, but poked his head inside the booth, seemingly taking a keen interest in the negotiations, no doubt, to make sure the price was right.

Neighbors called police, who arrested the carpenter on a drunk and disturbance charge.

•

PASSING THE BUCK. At the present time it doesn't seem likely that machines will ever replace men. A real live human being is often needed to straighten out the mechanical marvels.

A story from the British Post Office demonstrates this point very effectively.

It seems they have a robot named George. If there is a power failure, George dials "0" to get the operator and says, "There is a power failure, send repairman."

Unfortunately, however, nobody told George that the operator's number had been changed from "0" to "100". He kept on dialing "0" and instead of getting the operator, reached a cohort of his, Robot Charlie. Charlie informed him "you no longer dial zero for operator. Replace receiver and dial '100'."

So for the next three hours, until a repairman (not automated) showed up, George would dial "0" and report the failure to Charlie, who would tell him to hang up and dial "100."

Change of Address

Please notify your local postmaster and the Circulation Department of TELEPHONY (608 S. Dearborn St., Chicago 5, Ill.) of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

SINCE 1901

April 7, 1962

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H. D. FARGO JR., *President and Director of Advertising* • A. J. STULTS, *Vice President and Advertising Manager* • R. C. RENO, *Vice President and Editor* • DAN S. FARGO, *Vice President and Secretary* • JAMES M. BASHAM, *Managing Editor* • DIANNE P. DRUCKER, *Associate Editor* • HELEN HARDIN, *Associate Editor* • LAWRENCE J. HOGAN, *Washington Editor* • RAY BLAIN, *Technical Editorial Director* • PAUL E. MURPHY, *Electronics Editor* • WINNIE BURNETT, *Traffic Editor* • VIVIAN RYDEN, *Circulation Manager*.

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COMPACT

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ELIMINATORS
CHARGER-ELIMINATORS

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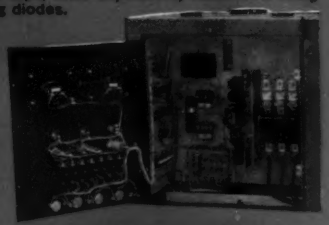
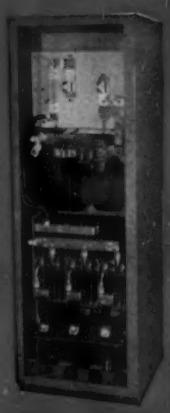
SINGLE PHASE—THREE PHASE
24, 48, 130/140 & 260 volts—2 to 800 amperes.

LORAIN EQUIPMENT IS ALSO MADE IN CANADA, BY CANADIANS, FOR CANADIANS

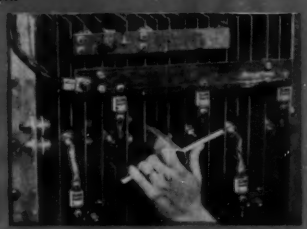
Front view, cover off, Model F400D50, showing convenient arrangement of input transformer, input taps, filter capacitors, fuses and satg rating diodes.



Front view showing meter panel hinged open to expose installer's terminals, input terminations and fuses, the plug-in reference circuit, the hinged component card and other components. All are directly accessible. Note the ample clearance around the input terminals and their proximity to the input bushing for safe and easy installation.



Model F400D50, rear view, cover off, showing accessible output terminals at the top. The silicon diodes with pigtail connections to the fuses, located between the heat sinks, are individually removable without disassembling the stack.



Detail view of power stack showing the compact arrangement of the silicon diodes and heat sinks. The diodes extend outwardly between sink plates and are quickly and easily removable, as shown, by means of a spark plug type wrench furnished with the unit. This arrangement allows diode replacement without disassembling the stack or removing it from the unit.

The meter panel, frame removed, showing the compact and central arrangement of the meters, operating switches, lamps, control breaker levers and adjusting screws. A complete control center.

The plug-in reference circuit card is removable, independent and interchangeable with the circuit in other Silicon FLOTROL models. Note the conveniently located installer's terminal strip and hinged component card, both to the left of the reference circuit card.

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DESIGNERS AND MANUFACTURERS
SUB-CYCLE® CONVERTERS
FLOTROL® RECTIFIERS
PARTNERS IN DEPENDABILITY

We let businessmen tell other businessmen about Long Distance

Pictured is Mr. Gilbert Merrill, a steel distributor in Westbury, New York.

The story of his sales success with Long Distance was told in a recent Bell System advertisement which appeared in *Time*, *Newsweek*, and other business publications.

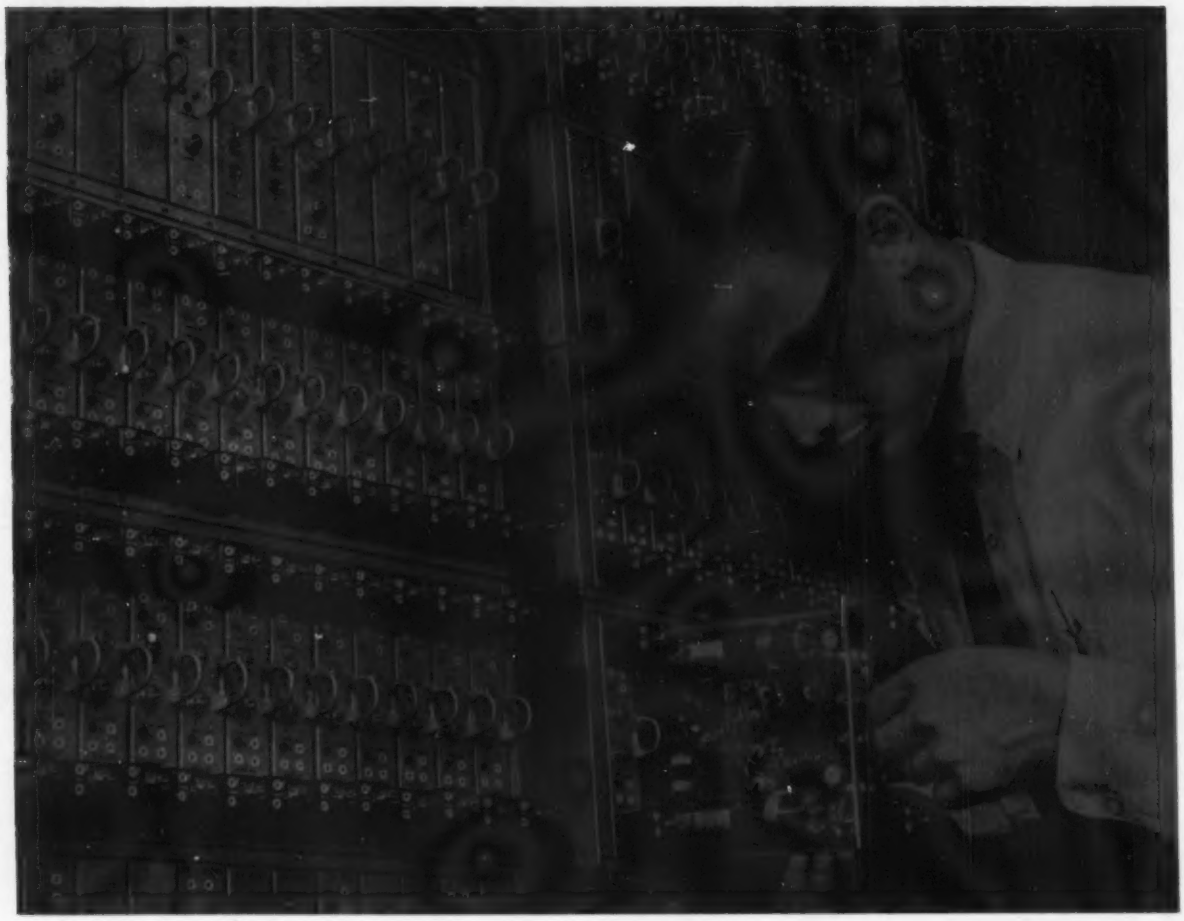
Mr. Merrill says, "We use Long Distance almost exclusively to sell out-of-town customers. Our warehouse's sales have grown from $500,000 to over $3,000,000 annually. In one morning, just a few calls brought us $12,000 in business."

When businessmen talk about Long Distance, we know that others will listen. Straightforward, dollars-and-cents testimonials like this are one reason why Long Distance calling was up substantially last year. In promoting these calls, we promote additional business for *all* of America's telephone companies.

Bell Telephone System

Need Fastest Delivery?

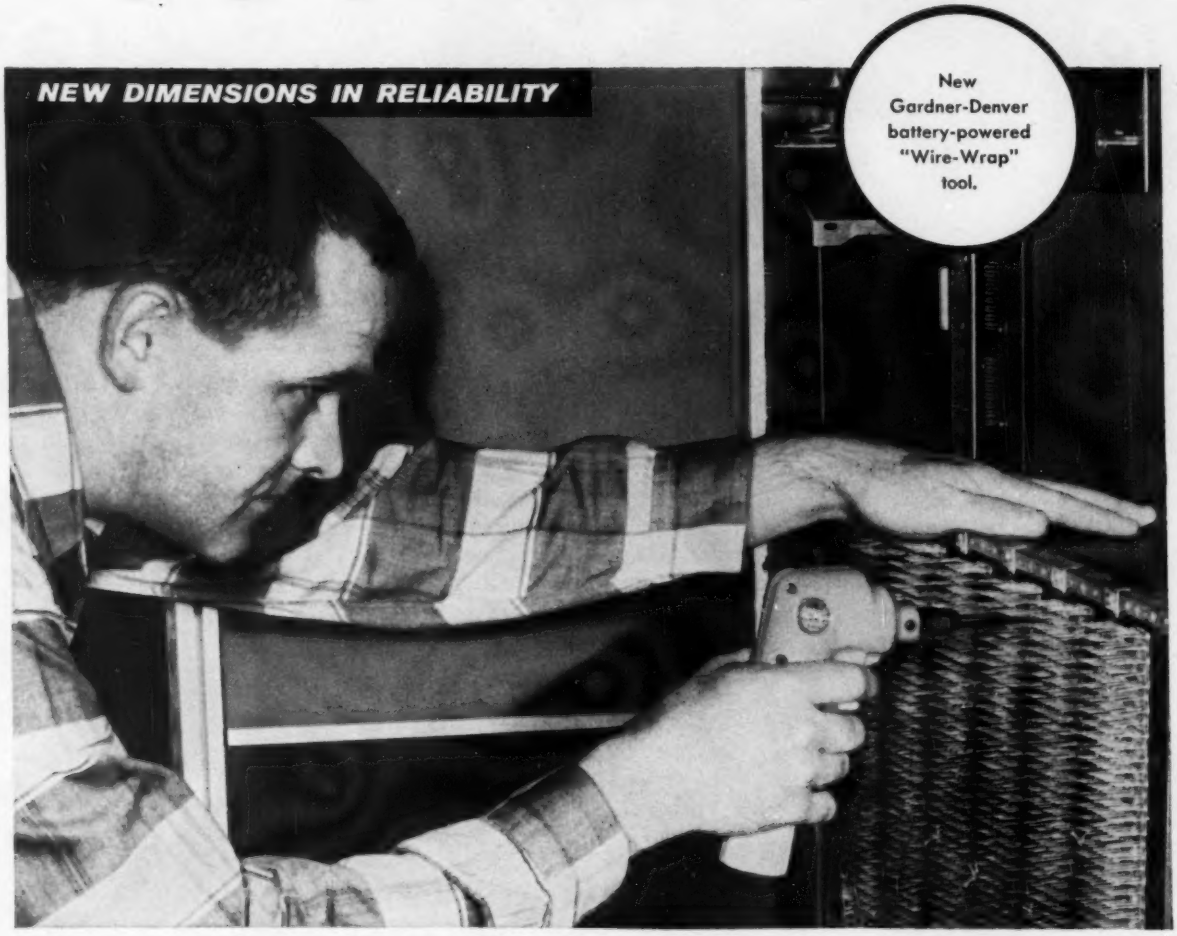
CALL COLLINS



Collins MX-106 Transistorized Carrier provides up to 600 toll-quality voice channels, saving up to 80% in space and 90% in power consumption.

The call: Recently a customer called Collins for 1,560 channel ends of MX-106 Transistorized Carrier. *Delivered:* Within 90 days! Whatever your communication requirements — early in-service date or special capability — take advantage of Collins volume production of the industry's *broadest microwave and carrier product line.* □ If your operation calls for fast delivery of quality equipment, call Collins . . . Dallas, area code 214, ADams 5-2331. Collins Radio Company, Dallas, Texas.

COLLINS



Now, make solderless connections...anywhere ...without plugging into a power source

Here's important news about switchboard installation. It's the new Gardner-Denver battery-powered "Wire-Wrap"® tool that provides time-saving convenience. And it's a must for the serviceman's kit.

No more dangling extension cords or trailing air hose to drag in, out, and around steel framing. No dependence on elusive power outlets.

This handy new tool weighs only 16 oz., yet makes thousands of perfect connections without recharging. And recharging is easy . . . simply plug the battery into a wall outlet overnight.

The new battery-powered Model 14R2 "Wire-Wrap" tool is another new dimension that Gardner-Denver has added to the reliability of telephone connections. Get the whole story in a hurry —phone or wire for new bulletin 14-3.

EQUIPMENT TODAY FOR THE CHALLENGE OF TOMORROW

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The
of

ATTRACTIVENESS

the LEICH CORDLESS PBX

As up-to-the-minute as tomorrow night, as modern as next year, as advanced as 1965!

This is the high styled LEICH CORDLESS PBX with its neat, trim lines and compact proportions. Its typewriter size means it occupies only a small corner of the desk.

It's hard to imagine that a device can look so nice and also improve your subscriber's telephone service so materially. And any one can operate this sleekly efficient communications center after a short orientation period.

The LEICH CORDLESS PBX is *so* attractive and *so* efficient, in fact, that it sells itself to subscribers when you expose them to its charms. It's available in 20, 16, and 12 line capacities with 5 connecting circuits and 5 central office trunks. Stock delivery on 20 and 12 line models. Automatic Electric Sales Corporation, Northlake, Illinois.

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NO. 4 OF A SERIES

*...like the Warren "Two-High" TFR shown here. There's no place like Rome to show off its most important feature: namely, that maintenance is a picnic. (This fully transistorized automatic battery charger combination is literally maintenance free.)

The Warren "Two-High" TFR combines two standard TFR's mounted and wired as a single unit, arranged to operate either singly or in parallel. The units operate in sequence when they are arranged for parallel operation: the second unit turns on automatically when the pilot TFR reaches capacity. At below-capacity loads, the second TFR remains off, operating only when you need it.

MORE FEATURES:

- **EXTRA EFFICIENCY...** packs most capacity in the smallest space — up to 200 amps of charging current mounted on a 23" rack.
- **EXTRA ECONOMY...** fully automatic controls. No extras to buy — failure alarm relays and relay rack are standard equipment.
- **LONGER LIFE...** no moving parts, no aging (thanks to silicon rectifiers). All components conservatively rated for 30-year life.

Warren offers a complete line of single phase and 3-phase 48 volt TFR's for "Two-High" operation. We'll be happy to send you complete information on any or all of them.

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JUST FOR THE RECORD..... **WARREN WAS FIRST WITH A COMPLETE LINE OF TRANSISTORIZED BATTERY CHARGERS* FOR THE TELEPHONE INDUSTRY**

(AND WITH SILICON RECTIFIERS, YET!)

This is what a Two-High TFR really looks like: U48 TFR16-L-48TFR16 48 Volt, 32 Amp Transistor Float Rectifier.

FIRST IN TRANSISTOR PRODUCTS FOR THE TELEPHONE INDUSTRY

IN THE NATION'S CAPITAL

BY LAWRENCE J. HOGAN, WASHINGTON EDITOR
and President, Larry Hogan Associates,
Public Relations Firm.

Senate Space Committee reports out compromise bill on satellite communication system. Tax revision bill carries in House. Settlement for expropriation of ITT Brazilian property stalled. Gambling "wire services" curb urged. REA revolving fund killed.

AS THIS DEPARTMENT predicted, the Senate Space Committee reported out a bill which is a compromise between the proposal introduced by committee chairman Robert Kerr (D., Okla.) and the Administration's bill. If anything, the compromise is weighted more heavily in favor of the Kerr bill than the Administration measure.

The fact that the committee's vote was unanimous indicates the fine job Kerr did in quarterbacking the compromise. The committee's action was met by an expected chorus of protests from those on the left of the ideological center of gravity in both houses. These hard-core liberals will not be satisfied with anything less than full government ownership and control. Two members of this fraternity, Rep. Emanuel Celler (D., N.Y.) chairman of the House Antitrust Subcommittee, and Sen. Estes Kefauver (D., Tenn.) chairman of the Senate Antitrust Subcommittee, are in a position to cause the measure more trouble. During hearings before the Kefauver group on Mar. 30, Senator Morse reminded his colleagues of the record-breaking filibusters he put on in 1954 to defeat the Dixon-Yates proposal of the Atomic Energy commission. This clearly indicated that he was prepared to do the same to block the Kerr bill.

IN SPEAKING OVER a Texas radio station, Sen. Ralph W. Yarborough, (D., Tex.) co-sponsor of the Kefauver-Morse government-ownership bill said, "For the nearly five years that I have been in the U.S. Senate as a representative of the people of Texas, you've been writing me asking how we would pay off the national debt, which is now about 300 billion dollars; and I have given a good bit of thought to this question. But up until recently, I have not seen an answer that promised any results in paying off this debt within the foreseeable future. But now, fellow Texans, there is a way. Through the development of communications by use of space satellites, this public debt can be paid off with the profits from a space communications satellite system within a few decades if we will just retain in public hands this heritage that belongs to the whole American people. . . .

"Two bills in the Senate, upon which hearings are being held, propose to give this space satellite system away to a private monopoly where one company will dominate it and one communications company would have the right to own satellites shot up by the U. S. government and reap the profits —the vast profits—from the sending of messages by use of those satellites.

"This satellite system was developed by the taxpayers of the United States, by the federal government, by the expenditure of 25 billion dollars in rocketry research, and now the federal government has also spent about 500 million dollars in developing communications satellites alone—the vehicles out in space that receive and transmit messages, as distinguished from the rocketry which sends them up there.

"One private company which seeks to get a monopoly on this through a bill passed by Congress has spent a mere 15 million dollars in research.

"I am co-author of a bill, S. 2890, which would establish a public communications satellite authority, to develop this as a public authority, somewhat like TVA or like the Panama Canal is owned. If the Congress hands over this space satellite communications system to a greedy private monopoly, it will make the Dixon-Yates deal look like peanuts. Space communication is so new that we do not know exactly how much is involved in the proposed giveaway. We do know that this government has spent all of these hundreds of millions on space communications research and billions of dollars more on rocket power research development and without these expenditures no system would be possible.

"I don't believe in giving away the fruits of this taxpayer investment to a private monopoly and then requiring the government to pay for using it as they would on the navigation of ships at sea, on airplane communications, on weather communications, and weather reports. . . .

"Let's give the taxpayer a break. Let's protect the American taxpayer."

BY NO STRETCH of the imagination could the profits from satellite communications pay off the national debt, particularly when left-wing legislators such as Yarborough consider a 15-million-dollar expenditure by a private company for research as insignificant.

The Senate Commerce Committee doubtless will go along with the compromise bill approved by the Senate Space Committee, but Kefauver will certainly do his best to discredit the plan by raising the monopoly "domination" bugaboo during his Antitrust Subcommittee hearings.

The White House plan called for two classes of stock, voting stock held by the public and non-voting stock held

by the companies. The stock would sell for $1,000 per share.

The compromise measure provides for one class of voting stock, half of which would be sold to the public and half which would be held by communications companies. Instead of the $1000 per share price recommended by the President, the stock would sell for no more than $100 per share. The satellite corporation's board of directors would consist of six representatives of the public, six representatives of the companies (with no more than three from any one company), and three members appointed by the President. Foreigners, including participating or connecting foreign governments, could own 10 per cent of the total stock and no more than 20 per cent of the public's half of the stock.

THE HASSLE between committee members and State Department witnesses which we reported previously showed up in the committee's bill. Instead of giving State authority to participate in all negotiations with foreign governments and companies, the compromise calls for the State Department merely to advise the corporation about pertinent foreign policy considerations and to render assistance when it is asked for by the corporation.

The money invested by the companies could not be included in computing rates to users. This is designed to give the companies an incentive to have the satellite corporation make a profit. Senator Kerr said the committee felt that allowing the communications companies to receive return on their investment in the satellite corporation by increasing rates for regular service, would provide less incentive to make the space system profitable than if they had to look to the corporation itself for return on investment.

Under the committee's plan, the FCC would authorize ownership of the ground stations by the companies themselves or by the satellite corporation. The Kennedy plan called for ownership of the ground stations by the corporation, apparently to the exclusion of the companies.

Unquestionably, the measure approved by the Senate Space Committee will gain strong support in both houses, and there is no reason to believe that President Kennedy would not sign such a bill into law. There is serious question, however, about whether or not opponents in key slots, such as Celler, Kefauver, Senate Democratic Whip Hubert Humphrey and other liberals will be able to bog the bill down in the murk so that it won't be passed before adjournment. If it is not enacted this session, we can put the countdown on permanent "hold" because the project just won't get into orbit early enough to beat the Russians.

Recent Quotations of Telephone Stocks

	3/30/62 BID	3/30/62 ASKED	3/1/62 BID	3/1/62 ASKED	Current Indicated Dividend Rate
Anglo-Canadian Tel. Co.	57	— 59	59¼	— 61¼	$1.20
British Columbia Tel. Co.	51	— 53	53	— 55	2.20
California Interstate Tel. Co.	26¾	— 28½	28¼	— 30	.80
California Pacific Utilities Co.	28½	— 30	25½	— 27	.90
*California Water & Tel. Co.	25½	— 26½	47½	— 49	.72
Carolina Tel. & Tel. Co.	55½	— 57½	54½	— 56½	1.60
Central Tel. Co.	35½	— 37	33	— 34½	.88+Stk.
Chenango & Unadilla Tel. Corp.	31½	— 33½	31½	— 33½	1.35
Cincinnati & Subn. Bell Tel. Co.	107	—110	109	—111	4.50
Citizens Utility Co. "A"	28¾	— 30¼	31	— 33	Stock Div.
Citizens Utility Co. "B"	26	— 27½	27	— 29	.68
Commonwealth Tel. Co.	29	— 31	29	— 31	1.00
*Florida Tel. Corp. Class A	19	— 20	36¼	— 38¼	.52
General Tel. & Elec. Corp. Common	25⅛	Last Sale	26⅛	Last Sale	.76
Hawaiian Tel. Co.	22	— 23	23¼	— 24¼	.58
Independent Tel. Corp.	9⅞	Last Sale	10⅞	Last Sale	—
Indiana Tel. Corp.	41	— 44	40	— 44	1.60
Inter-County Tel. & Tel. Co.	40	— 42	34¾	— 36½	.80+Stk.
Inter-Mountain Tel. Co.	21¼	— 22¾	21¾	— 23¼	.80
Jamestown Tel. Corp.	95	Bid	94	Bid	6.00
Lincoln Tel. & Tel. Co.	81	Bid	80	Bid	3.00
Lorain Tel. Corp.	42	Bid	34½	— 36½	1.00
Middle States Tel. Co. of Ill.	37	— 38½	1½	— 2	—
North Carolina Tel. Co.	1⅞	— 2⅜	42	Bid	1.40
Northern O. Tel. Co.	56	— 58	53	— 56	1.60
Peoples Tel. Co.	25	Bid	25	Bid	.88
Pioneer Tel. Co.	36	Bid	36	Bid	1.00+Stk.
Rochester Tel. Co.	32¾	Last Sale	31¼	Last Sale	1.10
Southeastern Tel. Co.	30½	— 32	31½	— 33	1.00+Stk
Southern New England Tel. Co.	51½	— 53	52½	— 54½	2.20
Southwestern States Tel. Co.	34¼	— 35¾	33½	— 35	1.28
Telephones Inc.	17	— 18½	18¼	— 19	—
Tel. Service Co. of O., Class A	29¼	— 31	30	— 31½	.36+Stk.
Tidewater Tel. Co.	28	Bid	28	Bid	1.40
United Utilities, Inc.	30¼	— 32	31¼	— 32¾	.96
Western Carolina Tel. Co.	11¼	— 12½	11¼	— 12½	.40
West Coast Tel. Co.	43½	— 45½	39¾	— 41¼	1.44
Western Light & Tel. Co., Inc.	33¾	— 35½	34¾	— 36½	1.20
Western Utility Corp.	15	— 16	14	— 14⅞	.40
Winter Park Telephone Co.	46	Bid	46	Bid	1.20

*After two-for-one split.

Tax Bill Passes House

The tax revision bill, which no one seemed to favor, passed the House with a modest but decisive majority of 219 to 196, and is heralded as the President's most impressive victory since the 1961 Rules Committee fight.

The Chamber of Commerce of the United States and other business groups opposed the measure, as did most of the major farm organizations; also, organized labor was unenthusiastic about it. Nevertheless, a Republican move to recommit the bill for removal of the withholding tax on dividends and the tax incentive plan, was soundly defeated and the measure then sailed through the House with surprising ease.

Earlier in the day, the President at his news conference warned the nation that failure of the tax revision bill would imperil the job chances of June graduates, complicate the nation's gold problems and hamper American industry in its efforts to compete with foreign companies.

Opponents of the bill would term these arguments specious because the AFL-CIO said the measure would not create new jobs and the President is assuming that the tax credit incentive plan will in fact be an incentive. He assumes that companies would spend money to modernize their plants and equipment. The business groups have

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GOOD CONNECTIONS "PAY OFF"

A guiding rule of action to keep in mind while working: "Only those who have the patience to do simple things perfectly, ever acquire the skill to do difficult things easily." – Johann von Schiller.

By T. DEWITT TALMAGE

GOOD CONNECTIONS pay off in more ways than one. For example, I've been told that by listening carefully in certain political circles you can hear whispered rumors to the effect, "If your 'connections' are good enough, you can even beat 'City Hall'." Revealing as it might be to explore "connections" of this sort, the temptation will be avoided. Instead, in an effort to beat the rising cost of handling telephone plant troubles, some practical aspects of improving the reliability of electrical connections in communication circuits will be examined in the light of recent developments.

In this case, the consequent achievement of getting better results per dollar spent in the plant department is the "pay off" for your exercising good business judgment.

The size of this pay off or reward for doing the job *right* in the first place can be just as attractive as you can figure out to make it in each individual instance. Some ways of getting the upper hand on this ever-present problem of keeping trouble reports to a minimum are the topics making up this discussion.

What You Stand to Discover

More specifically, the purpose of this article is twofold: First, to outline some relatively recent, currently important technological refinements in the ancient but still indispensable art of soldering so widely used in the communications industry and second, to discuss some associated steps useful in planning and organizing telephone plant work to take full advantage of today's timesaving tools and methods.

The second of this discussion's stated purposes concerning the planning of work will be tied in closely with the first objective by briefly referring to examples of modern telephone soldering techniques.

T. D. TALMAGE

The simplified method of planning described later on is applicable to most types of telephone plant work. Consequently, this methodical plan need not be restricted solely to soldering practices. Following these natural steps in planning one's daily work makes it just as easy to turn out an acceptable job as it is to "knock out" a sloppy one—if not easier.

Soldering Concerns Many

Logically enough, developments in telephone soldering practices have a bearing on the performance and the cost of constructing and maintaining plant facilities. For this triply important reason, portions of this discussion should be of concern to readers engaged indirectly in telephone plant activities, in addition to those directly involved.

There should be little disagreement with the statement that familiarity with current developments and trends affecting one's employment and income, the success of one's company, or the welfare of one's industry, or all three put together, is not only desirable but often is necessary for obtaining adequate returns from the time, effort, and money invested therein. A man who is able to find time to do this, finds the time to make a success of his job.

Co-ordinated Steps Effective

Three steps commonly taken to secure good soldering work are: (1) Wisely choosing tools and materials, (2) thoughtfully selecting job techniques, and (3) patiently applying age-old technical fundamentals to dovetail (1) and (2) together. This elementary formula for successful results can be made the heart of planning practically any work task in or out of the communications industry.

In view of this, it should surprise no one to learn that one of the more frequently quoted axioms among skilled craftsmen is, "A job well planned is half done, but a poorly planned job is never done."

A too prevalent misconception of planning work is that it applies only to major or complex projects. Nothing could be further from the truth. From both economical and technological standpoints, planning is required to obtain the best performance of even the smallest of tasks. For example, even in simple operations, your tools, supplies, drawings and other required materials should be arranged at the work location so as to minimize fatigue and inconvenience when handling.

A basic ingredient in realistic planning is complete knowledge of (1) the job to be accomplished, and (2) any pertinent ramifications that may surround it. This means that the more you know about the details *and* side lights of your job, its materials, and its tools, the better shape you are in to organize it—and to keep it that way. This is a continuous process because it is good "job insurance" to keep abreast of new developments and changes that are occurring steadily.

How to Keep Up-to-date

To keep currently informed of improvements and advancements that affect your present and future usefulness and thus avoid being tagged a "has-been", requires that you make satisfactory arrangements to keep in close touch with your industry's progress. Hour for hour, one of the least time consuming, more economical, and most informative ways of meeting this obligation is to study—from cover to cover—your industry's publications, such as this one, TELEPHONY.

Now when you study and compare justifications for making changes in or modifications to presently used plant materials, tools, and methods, you should be alert to pitfalls which can lurk in the background. The better you are prepared to recognize fiscal and technical booby-traps, the fewer will be the miscalculations that will be made.

Two of the more common causes of errors in judgment are: (1) Failure to collect and consider enough of the important facts, and (2) failure to devise and weigh an adequate alternative solution or solutions. Because many solutions are, at best, compromises, you should be on guard especially against the all-purpose, cure-all answer to any one general type of problem. This is for the reason that the greater the number and magnitude of compromises incorporated in a single decision, the less satisfactory it is over a broad set of circumstances such as encountered in the soldering of telephone circuit connections.

How to Choose Soldering Tools

There is a variety of considerations that ought to be weighed when picking out a soldering tool best fitted to a particular job. Among the factors that dictate the style, dimensions, and heating ability of the best suited soldering tool are, of course, the kind, size, and location of the actual connection that must be brought up to the melting point of the solder. It is helpful for every reader to clearly understand that the extent to which these two sets of key characteristics are mated and coordinated with due regard for the number of connections required to be soldered per unit of time, does much to influence the economy and reliability of each soldered connection.

The foregoing statement is in no way meant to belittle the necessity for (1) the proper preparation of the connection itself in advance of the actual soldering operation, (2) the intelligent selection of flux and solder, (3) the skillful manipulation of the correct soldering tool, and (4) the informed use of other technologically sound soldering and associated inspection techniques.

Matching Tool To Job

It follows, therefore, that with all other things being equal, a vital consideration in obtaining satisfactory soldering results is the close matching of the soldering tool's overall shape, dimensions, tip contour and size, and thermal characteristics with the specific requirements of the connection to be soldered.

Making sound recommendations on these and similar points for the initial purchase of safe, economical-to-use, and durable tools is one of the responsibilities that is often included in

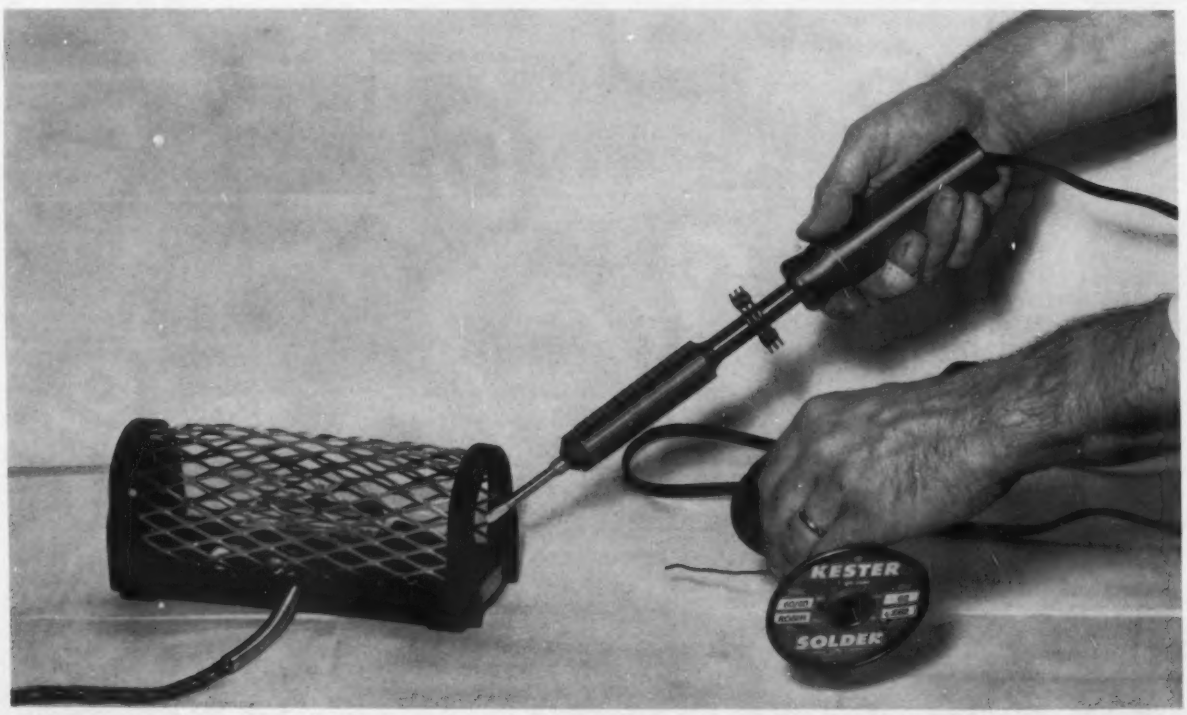

Fig. 1. The familiar electric soldering tool uses a plated tip which has a significantly longer service life and requires less maintenance attention than an all-copper tip. The thermostatically controlled safety toolholder prevents overheating of the tip, thereby providing maximum tool life. Mr. Talmage's article explains other ways to simultaneously better fiscal operating results and improve the quality of telephone service.

the previously mentioned "ramifications" of a skilled telephone worker's job duties. Specifying the best replacements for worn out tools is of no less consequence.

Some pointers for accomplishing this are included in the balance of this article, as well as some suggestions on how to obtain the best performance that a soldering tool is capable of delivering.

Judgment Depends on Information

To date, like the search for perpetual motion and the Fountain of Youth, the dream of the ideal "universal" soldering tool has not yet been completely realized. If it were available, there would be less need for you to read the rest of this article. The lack of a true "universal", or all-purpose, soldering tool does create the necessity to become acquainted—and acquainted in something more than a superficial manner—with the specifications and applications of the wide assortment of different soldering tools that *are* conveniently available. This is so for the simple reason that your judgment cannot be any better than your information—either in selecting, using, or servicing soldering tools.

It is of interest to note, however, that progress has been made since World War II in developing the so-called unit type soldering tool into a more flexible device that, within limits, might be termed a "multi-purpose" soldering tool. Nevertheless, a good working knowledge of each class of multi-purpose soldering tool—its advantages as well as its inherent limitations—is required in order to prevent misapplication, improper use, and, of course, unnecessary disappointment.

No Poor Soldering Tool

Stating this fact in another way, when used correctly under the recommended circumstances, there is no such thing as a poor soldering tool—there are only poorly informed solderers!

The reader should keep in mind when actively engaged in dovetailing all parts of the whole soldering process not to slight or underestimate the critically important role played by the thermal properties of the flux and solder[1] that will be used. This means, in effect, that all controlling elements of the soldering job must be considered in a completely co-ordinated manner if the stage is to be set properly to produce trouble-free soldered connections.

Systematic Check List Helps

Because no one soldering tool is suitable for all soldering jobs throughout an entire telephone system, how does one go about picking out the best tool to use in each situation?

In a discussion of this challenging question with a group of interested managers of Independent telephone companies, one widely experienced manager opined, "In the telephone business, there is no difference between overlooking something at the wrong time and failing to remember something at the right time. In either case, the result is the same: Something is done that otherwise could have been done better or cheaper or both." Insofar as selecting soldering tools is concerned, how can you avoid making this kind of mistake?

A combination memory aid or "jogger" and a device that pinpoints missing information is the useful "check list". This is simply a tabulation of essential points that must receive consideration in any plan, study, or comparison that purports to be complete. Preparation of a suitable "check list" of soldering tool characteristics and features will assist you in making your selection faster and more accurately—especially in cases where the requirements are more demanding than the average.

Needed vs Available Properties

Based on the pattern furnished by a tabular compilation of characteristics of representative soldering tools available through any supply source, a second set of factors, similarly arranged in tabular form, outlining the "needed and wanted" soldering tool properties for a particular class of soldering work to be performed, can now be drawn up. Matching the former tabulation against the latter is a quick way to

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[1]For details of melting range (in degrees Fahrenheit) of common compositions of soft solders, refer to Table I, pages 2 and 3, of specification No. QQ-S-571c, dated May 16, 1957, and associated amendment 2, dated May 1, 1960, entitled, "Solder: Lead Alloy, Tin Lead Alloy, and Tin Alloy; Flux Cored Ribbon and Wire, and Solid Form." Copies of this 16-page solder specification may be purchased for 10 cents each from the U. S. Government Printing Office, Washington 25, D.C.

Convention Calendar 1962

Association	*Date*	*City*	*Hotel*
Nebraska	**Apr. 18 and 19**	**Omaha**	**Sheraton-Fontenelle**
Wisconsin	**May 8 and 9**	**Milwaukee**	**Plankinton**
Indiana	**May 9 and 10**	**Indianapolis**	**Claypool**
Kansas-Missouri*	**May 21 and 22**	**Kansas City, Kan.**	**Town House**
Illinois	**May 24 and 25**	**Springfield**	**Abraham Lincoln**
Pennsylvania	**June 4, 5 and 6**	**Bedford**	**Bedford Springs**
New York	**June 11, 12 and 13**	**Whiteface**	**White Face Inn on Lake Placid**
California Washington Oregon*	**June 13 and 14**	**San Francisco**	**Jack Tar**
Tennessee	**June 21 and 22**	**Portland, Ore.**	**Sheraton-Portland**
Arkansas	**Sept. 5 and 6**	**Nashville**	**Hermitage Hotel**
Nevada	**Sept. 10 and 11**	**Hot Springs**	**Arlington Hotel**
Georgia	**Sept. 11, 12 and 13**	**Sparks**	**Sparks Nugget**
Michigan	**Sept. 13 and 14**	**Jeckyll Island**	**Corsair Motel**
Rocky Mountain	**Sept. 18, 19 and 20**	**Lansing**	**Jack Tar**
West Virginia	**Sept. 19 20 and 21**	**Salt Lake City, Utah**	**Hotel Utah**
North Carolina	**Sept. 24 and 25**	**Wheeling**	**Oglebay Park**
New England	**Sept. 30, Oct. 1, 2 and 3**	**Pinehurst**	**Carolina Hotel**
USITA	**Oct. 1, 2 and 3**	**Poland, Me.**	**Poland Spring Hotel**
Virginia	**Oct. 22, 23 and 24**	**Chicago**	**Conrad Hilton**
Alabama-Mississippi*	**Nov. 8 and 9**	**Roanoke**	**Hotel Roanoke**
Oklahoma	**Nov. 12 and 13**	**Birmingham, Ala.**	**Thomas Jefferson Hotel**
Florida	**Nov. 14 and 15**	**Oklahoma City**	**Skirvin**
	Nov. 25, 26 and 27	**St. Petersburg**	**Tides Hotel & Bath Club**

***Joint meeting**

ABOUT SPACE COMMUNICATIONS

By RALPH O. BECK*

PART II

THE FCC *Ad Hoc* Carrier Committee report was significant in a number of respects. The fact that the international common carriers unanimously and strongly advocated that they own and operate the American portion of a world-wide space satellite corporation was highly important.

The majority of these carriers recommended that the ground stations should be separately owned from the satellite corporation. The majority also went on to recommend that the U. S. Satellite Corp. should be owned by American common carriers authorized by the FCC to do business via the satellites. Likewise, that any investment on the part of the carrier in the satellite corporation should be a part of the rate base of that carrier.

Bills Introduced in Congress

Until the second session of the 87th Congress, there had not been any federal legislation introduced on the subject of a space satellite communication corporation. Promptly after this session of Congress convened in January, 1962, bills were introduced in both the Senate and the House of Representatives.

The proposed legislation falls into three broad categories:

First, carrier ownership measures that most closely paralleled the recommendations of the FCC *Ad Hoc* Carrier Committee.

Secondly, variations advocating another type of private ownership, but with additional governmental controls. The original of this was termed the "Administration Bill".

Thirdly, outright government ownership and operation of a U. S. Space Satellite Corp.

Features of Each Category

It is not the intent of this series of articles to discuss detailed differences of the various pieces of proposed legislation in this field. Rather, the purpose is to present in broad terms the salient features of each general category. An informed telephone industry can become an aroused industry. This, in turn, can be helpful in working for passage of the best type of legislation for the national interest.

In the first category are those bills most closely resembling recommendations of the *Ad Hoc* committee—S. (Senate) 2650, H. R. (House of Representatives) 9696 and H. R. 10104. The Senate Bill was introduced by Sen. Robert Kerr (D., Okla.). H. R. 9696 was introduced by Rep. George Miller (D., Cal.). These identical measures provide for ownership of the ground stations by the satellite corporation. The *Ad Hoc* report recommended that each U. S. carrier be permitted to establish its own ground station or participate in joint ownership of ground stations with other U. S. carriers.

Coordination Desired

The argument for carrier ownership of the ground stations is simply one of the carrier being a better point of coordination through his distribution network than would be the satellite corporation. Absentee ownership would characterize the ground station and, in truth, it would become part of a common carrier's common carrier. This type of ownership has been frequently referred to as Comsat. Thus, the carrier which is responsible, in the final analysis, for service to the customer would be forced to rely upon Comsat. Blame would be laid on the doorstep of the carrier by the subscriber if Comsat failed to render proper service.

In addition, these two bills do not provide that, in each instance, the investment of the carrier in the satellite corporation be recognized as a part of that carrier's rate base.

Teague Bill Provision

These two main differences with the *Ad Hoc* report are recognized by H. R. 10104. This bill was introduced by Rep. Olin E. Teague (D., Tex). The Teague bill provides that ground stations may be owned jointly or separately by U. S. common carriers authorized by the FCC to do business via satellites. Investment in the satellite corporation *may* be included in the rate base of the investing carrier at the discretion of the FCC.

The second broad category of current proposed legislation is typified as the "Administration Bill". Introduced in the Senate was S. 2814 by Senators Kerr and Magnuson (D., Wash.). Two identical bills in the House—H. R. 10115 and H. R. 10138—were introduced by Representatives Oren Harris (D., Ark.), and George Miller (D., Cal.).

Differences Set Bill Apart

Several fundamental differences set the "Administration Bill" apart:

(1) **Financing by two classes of stock.** Class A which would be one million authorized shares issued at not less than $1,000 per share. Any person or corporation may own Class A stock, except that no owner can hold more than 15 per cent of the authorized, or 25 per cent of the outstanding, stock. There also would be a Class B stock of 10,000 authorized non-voting and non-dividend paying shares. The Class B shares would be issued at a price to be determined by the satellite corporation to any carrier authorized by the FCC. Only the

*This is the second of a series of articles by Mr. Beck, who is Vice President of Hawaiian Telephone Co. of Honolulu. He represented his company on the FCC Ad Hoc Carrier Committee, composed of 10 U.S. international common carriers, to study establishment of satellite communications system.

Proposed Legislation on Space Communications—Comparison of Approaches

	Miller Bill (H.R. 9696)	Teague Bill (H.R. 10104)	Harris Bill (H.R. 10115)	Anfuso Bill (H.R. 10586)	Williams Bill (H.R. 10747)
Form of Legislation	Amend Space Act.	Amend Space Act.	Independent legislation: "Comm. Satellite Act of 1962."	Amend Space Act.	Independent legislation: "Comm. Satellite Act of 1962."
Type of Corporation	All the bills propose a profit-making, stock corporation which would be a common carrier subject to the Communications Act of 1934.				
Responsibility for Organization	President with notification to Space Committees.	President with notification to Space Committees.	President.	President with notification to Space Committees.	President with notification to Commerce Committees.
Capitalization	500 million dollars consisting of 5,000 authorized shares of $100,000 each.	500 million dollars consisting of 5,000 authorized shares of $100,000 each.	Class A: one million authorized voting shares eligible for dividends to be issued at not less than $1000 per share. Class B: 10,000 authorized non-voting, non-dividend shares issued at price to be determined by corporation.	500 million dollars consisting of 5,000 authorized shares of $100,000 each.	500 million dollars consisting of 5,000 authorized shares of $100,000 each.
Ownership	By U.S. carriers authorized by FCC and purchasing at least five shares.	By U.S. carriers authorized by FCC and purchasing at least five shares.	Class A: by any person or corporation, except no owner can hold more than 15% of authorized, or 25% of outstanding stock. Class B: by any carrier authorized by FCC.	By U.S. carriers authorized by FCC and purchasing at least five shares.	By U.S. carriers authorized by FCC and purchasing at least five shares.
Directors	Two appointed by each owning carrier. Two designated jointly by using but non-owning carriers.	Two appointed by each owning carrier. Two designated jointly by using but non-owning carriers.	Between nine and 13 to be elected by Class A holders. Cumulative voting but no holder can vote for more than two directors.	Two appointed by each owning carrier. Two designated jointly by using but non-owning carriers.	Two appointed by each owning carrier. Two designated jointly by using but non-owning carriers.
Ground Stations	Owned by corporation.	Owned jointly or separately, or capacity leased, by participating carriers with control of arrangements by FCC.	Owned by corporation.	Owned jointly or separately, or capacity leased, by participating carriers with control of arrangements by FCC.	Owned jointly or separately, or capacity leased, by participating carriers with control of arrangements by FCC.
Rate Base Treatment	Investment in corporation not included in rate bases of owning carriers.	Investment in system may, in discretion of FCC, be included in rate bases of owning carriers.	Investment in Class B stock only included in rate bases of carriers.	Investment in system may, in discretion of FCC, be included in rate bases of owning carriers.	Investment in system may, in discretion of FCC, be included in rate bases of owning carriers.
Acquisition of Equipment	All bills would require competitive bidding under control of FCC.				
Use of System	Non-discriminatory by all carriers authorized by FCC, whether owners or not.	Non-discriminatory by all carriers authorized by FCC, whether owners or not.	Non-discriminatory by all present and future communications common carriers.	Non-discriminatory by all carriers authorized by FCC, whether owners or not.	Non-discriminatory by all carriers authorized by FCC, whether owners or not.
Regulation	By FCC, with some authority in NASA concerning technical specification.	By FCC, with some authority in NASA concerning technical specifications.	In part by FCC, but extensive powers also given to President. In addition, some powers vested in NASA, State Department and attorney general.	By FCC, with some authority in NASA concerning technical specifications.	By FCC, with some authority in NASA concerning technical specifications.
Charges by Corporation	To provide fair return on capital invested.	To provide fair return on capital invested.	No specific statement, except that economies resulting from system must be reflected in rates.	Must be just and reasonable.	Must be just and reasonable.

Class B stock would be recognized as a part of a carrier's rate base.

The capitalization provisions of the "Administration Bill" are indeed strange. Under certain circumstances, control of the satellite corporation could be held by investors outside the communication industry. The carriers using the satellite facilities could increasingly become less and less a management factor.

It is freely admitted by the carriers, themselves, that, initially, the satellite corporation would be speculative. At best, it probably would not pay any dividends for several years.

Public Service Incentive

The only incentive a carrier might have to purchase the Class B stock would be that of public service. In other words, an investment that would partially insure the successful financing of the new enterprise.

But the great incongruity in the "Administration Bill" with respect to financing appears to result in two conflicting, and perhaps irreconcilable, interests in the two classes of the corporation stock. The interest of the Class A stockholders will be that of earnings which will come from charges to the carriers using the facilities of the corporation. The Class B stockholders, on the other hand, are the carriers who will be concerned primarily with efficient services and low rates.

Control by Agencies

(2) **Ground stations** would be owned by the satellite corporation, but carriers who want to can build and operate their own.

(3) **Controls over** the management of the satellite corporation by other government agencies in addition to the generally accepted type of regulation by the FCC. These other agencies are the State Department, Justice Department and the National Aeronautics and Space Administration. In addition, the President of the United States would exercise certain controls through his office.

There are various examples of these controls that are not now exercised over the affairs of communication common carriers. Under the "Administration Bill," negotiations with foreign carriers would be conducted or supervised by the Department of State. The Secretary of State would have the right to request the FCC to institute a proceeding under the Communications Act to require the provision of service to specified foreign points. Officials of the U. S. Government would have the right to attend any and all meetings of the board of directors or of stockholders of the corporation.

Other Controls Proposed

These officials would recommend to the President that which would need to be done by the corporation to attain full compliance with the national policy regarding international communications through space satellites. There are other controls detailing the extent of supervision over management of day-to-day affairs of the corporation.

Regulation of any communication common carrier must necessarily infringe to some extent on the "rights" of private management. This has been an accepted fact by common carriers with respect to the regulatory powers of the FCC. It is also recognized that the national interest must influence certain management decisions in the area of space satellite communications. But is the national policy of private ownership and operation being carried out in this instance? Is it proper to organize a "private" corporation and employ "private" capital while reserving to the government the right to make major management decisions? The government controls referred to would, when taken together, deprive the management of the satellite corporation of rights which are needed to manage the enterprise effectively.

Outright Government Ownership

The third category of proposed legislation is clearly in the field of outright government ownership and operation. This is outlined in S. 2890 introduced by Senators Kefauver (D., Tenn.), Morse (D., Ore.), Yarborough (D., Tex.) and Gore (D., Tenn.). H. R. 9907 also proposes a Tennessee Valley type of authority and government operation. It was introduced by Representative Ryan (D., N. Y.).

Senator Kefauver would create a Communication Satellite Authority, "whose purpose and object shall be to develop, construct, launch, operate, manage, and promote the use of a communication satellite system".

His bill furthermore states: "In order to assure a structure of control which will assure maximum possible competition and development of an economical system, the benefits of which will be reflected in overseas communications rates, the corporation shall be organized and operated as a communications common carriers' carrier. It shall acquire, own, and operate, as an agent of the United States Government, the United States portion of the communications satellites, and the ground stations and associated ground control and tracking facilities situated in the United States, territories or dependencies thereof."

Exempt from Taxation

S. 2890 would create a board of directors of nine members. Four would be known as "governmental directors" as they would be appointed from departments and agencies of the U. S. Government. Five would be known as "private directors" as they would be citizens in private life who would be appointed by the President of the United States by and with the advice and consent of the Senate.

This District of Columbia corporation that the senator from Tennessee visualizes would be exempt from taxation in any form by any state, county or municipality. The corporation would charge rates producing sufficient gross revenues to "provide funds for the operation, maintenance, and administration of its communications satellite system; provide for the servicing of outstanding bonds, including provision for and maintenance of reserve funds and other funds established in connection therewith; payments to the Treasury as a return on the investment of appropriated funds, if any; and for such additional margin as the board may consider desirable for purposes connected with the corporation's communications satellite system. Such overseas communication rates shall be fixed at levels which are as low as practicable."

Senate, House Hearings

Thus far, hearings on various bills pertaining to space satellite communications have been held by both Senate and House committees. Chaired by Senator Kerr, the Senate Committee on Aeronautical and Space Sciences held hearings on S. 2650 and S. 2814. Chaired by Representative Harris, the House Committee on Interstate and Foreign Commerce conducted hearings on H. R. 10115 and H. R. 10138.

In general, representatives of the same organizations appeared before both committees. The common carriers were represented by American Telephone & Telegraph Co., Hawaiian Telephone Co., International Telephone & Telegraph Co. for its subsidiary American Cable & Radio Corp., and Radio Corporation of America, for its subsidiary RCAC. These organizations supported carrier ownership of the satellite corporation; likewise individual carrier ownership (or in partnership with other carriers) of the ground stations. Each supported the philosophy of ownership and management of a space

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MANAGEMENT ASKS:

"Why Did You Buy So Many Telephone Sets?"

By W. V. BENJAMIN*

OUT OF ALL of the various kinds of material used in the telephone business, the one that seems to attract the most interest is the telephone instrument itself. There are not many questions about the purchases of such items as poles, wire, or even cable, but the one question that seems to come up repeatedly is "Why did you buy so many new telephone sets?"

There are several logical reasons for the interest shown in the purchases of telephone sets. First of all, the amount of money involved stands out as a pretty large item in the over-all telephone construction program. Then, too, the total quantity of new sets purchased gets pretty big, and seems all out of proportion to the basic need for additional sets.

Customers' Moves Factor

This naturally leads to the assumption that if we did a better job of controlling the use of these sets, then we wouldn't have to buy so many, and we could reduce the construction program accordingly. However, a closer analysis of the various factors that make it necessary to purchase these telephone sets will quickly eliminate any hope of making a significant reduction in the construction program.

If all of our customers suddenly changed their normal habits and stopped moving around, then the only additional sets we would have to buy would be the sets required to provide service for our new customers, and for additions to existing service. This, of course, assumes that there was no change in stock levels, and that we made no change in the existing telephones in service. However, customers do move around, and some of them who don't move decide that they want a different kind of a telephone, so the result is a constant flow of telephones both going in and coming out, with the net difference making up the net gain.

No Problem With Black Sets

Not so many years ago, we told our customers that they could have any kind of a telephone they wanted, just so it was black, and that they could have their choice between a long upright desk-stand, or a more fashionable "cradle set", although they might have to pay a little more for the "cradle set."

In those days all of the telephone movement didn't have much effect upon the need for additional sets, because whatever came out could be reconditioned and put back in service somewhere else. Consequently, the only reason for buying new sets was to take care of the additional customers, and the total purchases was practically the same as the net gain.

W. V. BENJAMIN

There was always a small number of sets which were unrepairable, and some minor changes in stock levels, but for many years the ratio of new set purchases to net gain was around 1.1 or less. Eventually, the desk-stands lost their appeal and when they were recovered from the outward movement they could no longer be reused, but had to be junked (this was before someone thought up the idea of making table lamps out of them). However, even then the ratio of new purchases to gain was still a good index, although it had moved up to about 1.2, or a little higher.

Ratio Means Less Today

For many years, this ratio of 1.2 was a pretty good measure of how efficiently the purchases of new sets was being managed. Consequently, it is not surprising that explanations are requested as to why current purchases are averaging more than double, or even triple, the net gain figure.

The fact is that, in today's market, there is no longer a direct relationship between purchases and net gain. If business fell off to the point where the net gain was zero, you might still have to purchase appreciable quantities of new sets to take care of customer demand for different types of sets, so the ratio of purchases to gain would then be infinite.

With the shift of population to the suburbs, and with the increased movement of people, you have to keep on putting in a telephone and taking it out quite a few times before you

*Mr. Benjamin is General Buildings, Supplies and Motor Equipment Supervisor of Wisconsin Telephone Co., Milwaukee.

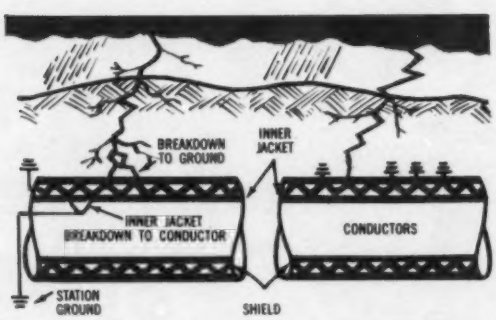
When Lig[illegible]atens

SUP[illegible]

Bu[illegible]es

and [illegible]ables

...Conducting Outer Jackets
give *EXTRA PROTECTION!*



WHY? Because the Conducting Polyethylene Outer Jacket "cooperates" with the strike by providing the lightning-induced shield currents an easy access to earth at all points along the cable length.

RESULTS? Shield-to-ground resistance is lowered; therefore current flow along the shield is lessened and voltage build-up is reduced.

ADVANTAGES? Punctures of the outer jacket are minimized, chances for dielectric breakdowns to the conductors are reduced, corrosion protection for the shield is increased. The added protection of the conducting outer jacket is required for wires and cables used by the U.S. Air Force in The Minute Man Missile Project.

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Write today for complete details and prices

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finally get ahead of the game. Here is a fairly typical picture of the number of times you have to install a telephone before you finally get a net gain:

Regular main station—10 in for one gain.

Extension station—3½ in for one gain.

Key telephone set—2½ in for one gain.

Average for all types—6 in for one gain.

Other Uses for Additional Sets

This gives a general idea of the volume of telephone sets required to take care of this movement alone. Additional sets are also used for customers' requests for a change in the type of instrument, for changes initiated by the company, and for maintenance replacements.

Since it is generally the practice to leave some of the telephones in place when customers move, not all of the outward movement results in making telephone sets available for immediate reuse. This, of course, results in an offsetting reduction in the telephone sets required for the inward movement in those cases where the left-in station can be reconnected for a customer moving in. Consequently, it is only the over-all net change in the total number of left-in stations that really affects the requirement for new telephone sets.

Factors for Balance Sheet

If we disregard, for the moment, the demand for various types of sets we can establish an over-all company balance sheet of the total supply and demand of all types of telephone sets on the following basis:

The total supply of telephone sets in increased by—

(1) Sets removed in connection with the outward movement.
(2) Decreases in field stock.
(3) Decreases in total left-in stations.
(4) Purchases of new telephone sets.

The total supply of telephone sets is decreased by—

(1) Sets installed in connection with the inward movement.
(2) Increases in stock levels.
(3) Increases in total left-in stations.
(4) Sets lost, or destroyed, by fire or flood.
(5) Sets disposed of as junk, or sold for salvage.

Putting the supply and demand together we can then conclude that the total purchases of new sets will be the sum of the following:

(1) Total net gain.
(2) Plus, or minus, the net change in stock.
(3) Plus, or minus, the net change in left-in stations.
(4) Plus the sets lost, or destroyed.
(5) Plus the sets junked, or sold for salvage.

Junked Sets Key

The key to the whole problem lies in the last item—the total sets junked. In former days, with a few simple types of instruments, this was an insignificant figure, but in today's market this can readily become the largest single item in the list, and may be several times as large as the total net gain. What it represents, in reality, is the factor of obsolescence and is the net result of all of the things that have been done in recent years to give the customer better telephone service.

In other words, it is the surplus of what is left over after trying to match up all of the types of sets made available through removals, changes in types, and maintenance replacements, with the types of sets required to take care of current customer demand.

Demand Guides Purchases

If we get back large quantities of black desk-sets, but the customers want black wall-sets, we are going to have to buy black wall-sets, even though we may end up with a surplus of black desk-sets that we can't use. We could hold these surplus sets on the shelf, but since there is a continuing increase in the supply, and a continuing decrease in the demand, the only logical thing to do is to get rid of them.

These surplus sets are made up, primarily, of the original type of black desk-sets. When they first came out, they were a big improvement over the two-piece set with the separate bell-box. However, we are in an age of new product development, and today's newest product becomes a museum piece tomorrow, just as the Model T Ford, which was originally a revolution in the automobile field, is a collector's item today.

User Controls Car Purchase

Of course, there is a fundamental difference between telephones and automobiles. When the customer decides that his old car is no longer attractive to him he can get the latest model, provided he is willing to pay for it. But the customer doesn't buy his telephone set, he only pays a service charge for its use. If the set is replaced with the newest model, the telephone company has to provide the additional capital and pay the increased depreciation expense involved. Since these costs ultimately have to be paid for by the customer, constant changes in instruments could result in rates that would be prohibitive.

Consequently, prudent management requires that every reasonable effort be made to obtain the maximum service life out of existing telephone sets. But, in the final analysis, it is the customer who really determines what he wants. If he wants a color set, and is willing to pay for it, he is not going to be in the least concerned about the fact that his free choice is going to result in a surplus of the older type of sets that will have to be junked.

Plant Changes Have Bearing

In addition to the desires of the customer, there are also technical changes in outside plant and in switching equipment that make it impractical to use older types of instruments. This results in a continuing decrease in the number of possibilities where the older sets can be reused. For example, the older types of sets cannot be used in any of the following installations:

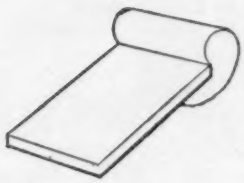
(1) Installations where the customer orders a color set of any kind.
(2) Installations where the customer wants a wall-set.
(3) Installations where the customer orders a key-set, or any of the other special types of black sets.
(4) Installations where the zoning requirements, resulting from loop resistance, make it necessary to use the newer type of set designed for such use.
(5) Tip-party stations in areas where Automatic Number Identification (ANI) equipment is in use, or is going to be installed in the near future. This equipment requires the newer type of set for tip-party identification.

Not Much Left for Reuse

This doesn't leave very much of the total inward movement where there is a possibility of reusing the older type of black desk-set. The field of use is pretty generally limited to the inner transmission zone for residential customers who do not want a color set, or a wall-set, and in exchange areas where there are no immediate plans to install ANI equip-

(Continued on page 52)

The Plant Man's NOTEBOOK



By RAY BLAIN, Technical Editorial Director

PERHAPS THE greatest change in outside plant construction during the past 10 years has been the use of plastic insulation for cable conductors. The use of polyethylene to replace paper insulation on cable conductors was started in 1952. Now, probably half the cable manufactured for both the Independents and the Bell System has polyethylene-insulated (PIC) conductors. PIC also progressed to color-coding which has greatly simplified the splicer's work.

The development of moisture-resistant PIC cable also made possible the increased use of buried plant in both rural areas and new suburban housing developments. The development and use of various types of small ditching machines has in many cases made buried installations competitive in cost with aerial plant. Economy in maintenance is another advantage of buried plant, as these installations are not subject to storm damage. Improved appearance is another strong argument for buried plant.

Despite the numerous advantages of PIC cable, a large amount of paper-insulated cable remains in service and will be maintained for many years. These cables have been made more reliable, however, by maintaining them under pressure by injecting dry air. The pressurization of cables is not new. As early as 1920, some toll cables were pressurized with nitrogen gas. This practice has been replaced by an inexpensive arrangement of using a dryer-compressor to feed dry air into the cables from a central point.

As the result of low cost for the dry air system, it is necessary only to close the larger leaks in cables. Small leaks may be ignored which reduces considerably the cost of pressurization. About half of our paper-insulated cables have been pressurized by the use of this system to date. There is little doubt that practically all paper-insulated cables now in use will be pressurized before they reach the end of their economic service life.

•

The City of San Diego, Cal. has a program under way to plant 2500 trees along its streets during this fiscal year. The program then calls for planting 5000 trees each year thereafter. A 30-inch earth auger will be used to dig the holes for the planting.

There is little doubt this operation will be carefully monitored by the telephone company and other utilities to prevent damage to underground plant.

•

A 34-year-old Chesapeake & Potomac Telephone Co. installer-repairman became the first on-the-job Bell System fatality in 1962. He was killed when his installation truck was struck broadside by a train at a railroad crossing in West Virginia in January. The railroad engineer said he saw the truck approaching some 50 feet from the crossing. Although the engineer sounded his whistle, he said the driver of the truck never looked in the train's direction.

On-the-job or off-the-job, safe driving habits are always necessary—necessary for survival.

•

The Indiana Bell *News* carried an interesting article recently titled: "The Days of the Interurban". The article says these electric interurban lines extended their tracks from 678 miles in 1900 to 2,318 miles in 1914.

The writer well remembers riding these cars soon after World War I between Columbus, O., Dayton O. and Indianapolis, Ind. We also rode one frequently from Indianapolis out to Fort Harrison. They were considered good and rapid transportation, but could not compete with the improved roads and automobiles and, therefore, the system finally went out of existence in January 1953.

•

An attractive new type of sidewalk telephone booth was given a premiere showing by the General Telephone Co. of California recently in Long Beach. The installation, which may become the prototype of other paystations in metropolitan areas, is currently being tested in a heavy pedestrian-traffic area.

Featuring a brightly lighted dome and transparent plastic side curtains, the installation is the first of its type in California. Additional sidewalk telephones are planned for future sites throughout Long Beach.

The aim of this new program is to provide Long Beach citizens and visitors with telephone service 24 hours a day in places where a telephone is urgently needed.

Sidewalk booths have been successful in other major cities such as Cincinnati, Birmingham, Toronto and New York. We have observed the numerous sidewalk booths in New York City and from all indications they all do a good business. It is also understood that they do not reduce the take from other nearby paystations. Apparently, calls made from sidewalk booths would never be made if the booth were not so conveniently located.

•

Our long-time friend, George Wall, president of Orbit Industries of Vienna, Va., answered the telephone in his home one evening recently and was informed by the operator that he should stand by for a conference call.

George, thinking that there was something of real importance coming up, grabbed a scratch pad and waited anxiously with pencil poised. Much to his surprise, however, when the call came through it was for his teenage daughter. The conference call was for the purpose of discussing homework with several of her classmates. Prior to hearing this story, we did not know that a local conference call could be made in this Virginia community.

"CROSS TALK"

Horsepower was much safer when only the horses had it.

•

A young boy is defined as a restless noise with dirt on it.

TODAY'S HIGHLIGHTS

of finance-taxes-business trends

By WILLARD F. STANLEY

BOND PRICES GO UP AGAIN: The 30 days ended Mar. 25 furnished fresh evidence of how incorrect the predictions of most financial experts have proved to be, with respect to the trend of long-term interest rates in 1962. They had predicted, almost unanimously, higher money costs in the new year, but the moderate rise in bond prices during the year, up to the end of February, was followed by an even sharper upward movement during the latter days of March.

The Wall Street Journal tabulation of new utility funded debt issues gave significant evidence of this upturn in prices. Of the 14 new utility bond issues shown in this tabulation at Mar. 22, average yields, based on then bid prices, were six decimals (0.06 per cent per annum) below the average yields based on the original offering prices of the same securities.

This followed a similar drop in average yields of two decimals (0.02 per cent per annum) during the preceding 30 days. Furthermore, the Mar. 22 quotations showed 13 of the 14 issues carried higher bids at that date than their offering prices.

What has caused this unexpected and persistent lowering of bond yields since the first of the year? It appears that the most comprehensive answer probably lies in lower demands for long and short-term money, due to the slowing down of the economic recovery during these months. Some of those making the original predictions of higher interest in the first half of 1962 still adhere to their beliefs, but it's evident that a change in trend must occur quite soon if there is to be any chance of such prediction coming true.

There still seems to be no strong indication of increased long-term demands in the reasonably foreseeable future. On the other hand, it seems unlikely that the recent sharp upward movement in bond prices will continue. More probable seems a flattening out of bond prices over forthcoming months.

With predictions as to the strength of the continuing economic recovery going somewhat awry, there is an indication of unusual uncertainty as to trends in the next few months. However, there seems little likelihood of a move in the money market in either direction sufficient to warrant utility borrowers of funded debt in altering normal schedules of raising such funds as their needs occur. Certainly, after the pronounced improvement in yields in recent periods, there should be no reason to hold back bringing offerings to market as fast as feasible in line with money requirements.

After falling to about 21.5 in January, the average price-earnings ratio for util-

Mr. Stanley, formerly a utility financial executive, is now president of Corporate Services, Inc. of New York City and is well known as a financial writer. He is a member of the Controllers Institute of America and the New York Society of Security Analysts. He serves on the Finance Management Committee and the Tax Committee of the Controllers Institute (N. Y. Control). His articles are appearing once a month in TELEPHONY.

ity common stocks recovered to 22.0 at the end of February. There has probably been little change in this figure during March to date. Needless to say, the indicated cost of common stock equity funds, based on this price-earnings ratio is so unprecedently favorable to utility issuers as to indicate the wisdom of selling common stock requirements for at least a year or two to come at these exceedingly attractive levels.

* * * *

STOCK MARKET SLIPS A BIT: Since the turn of the year, many security analysts have been waiting expectantly for the stock market to reflect the good news and favorable economic predictions which, for awhile, were almost universal. Among these were estimates of a 25 per cent increase in corporate earnings in 1962, the greater part of this rise being expected to occur in the first half of that year. The fairly sharp market drop of January was followed by a moderate recovery in February, which has been slightly reversed in March. Less than a one per cent decline was registered in the New York Times 50 combined stock average between Feb. 23 and the end of March. At the latter time, the Times average stood at 2 per cent below the close of 1961; 13 per cent above the end of 1960; and 5 per cent lower than on Dec. 31, 1959.

While little movement was evidenced in this average, the stock market continued highly selective with about the same considerable number of issues making new highs as lows, day after day. The market seems to be standing by to see if the predictions of higher corporate earnings and better business during the current year seem likely to be fulfilled to the degree promised at the beginning of the year, or if the recovery will slow down, with consequent reduction in earnings and business activity.

Underlying the situation as a cautionary factor, is the still unusually high average price-earnings ratios reflected by the great majority of industrial stocks, as well as public utilities. This situation may create a permanent "overhang" which will serve to retain market prices within reasonable limits during the current year. In other words, investors may be waiting for the increased earnings to catch up with these unprecedented price-earnings ratios and bring them down to more normal levels.

* * * *

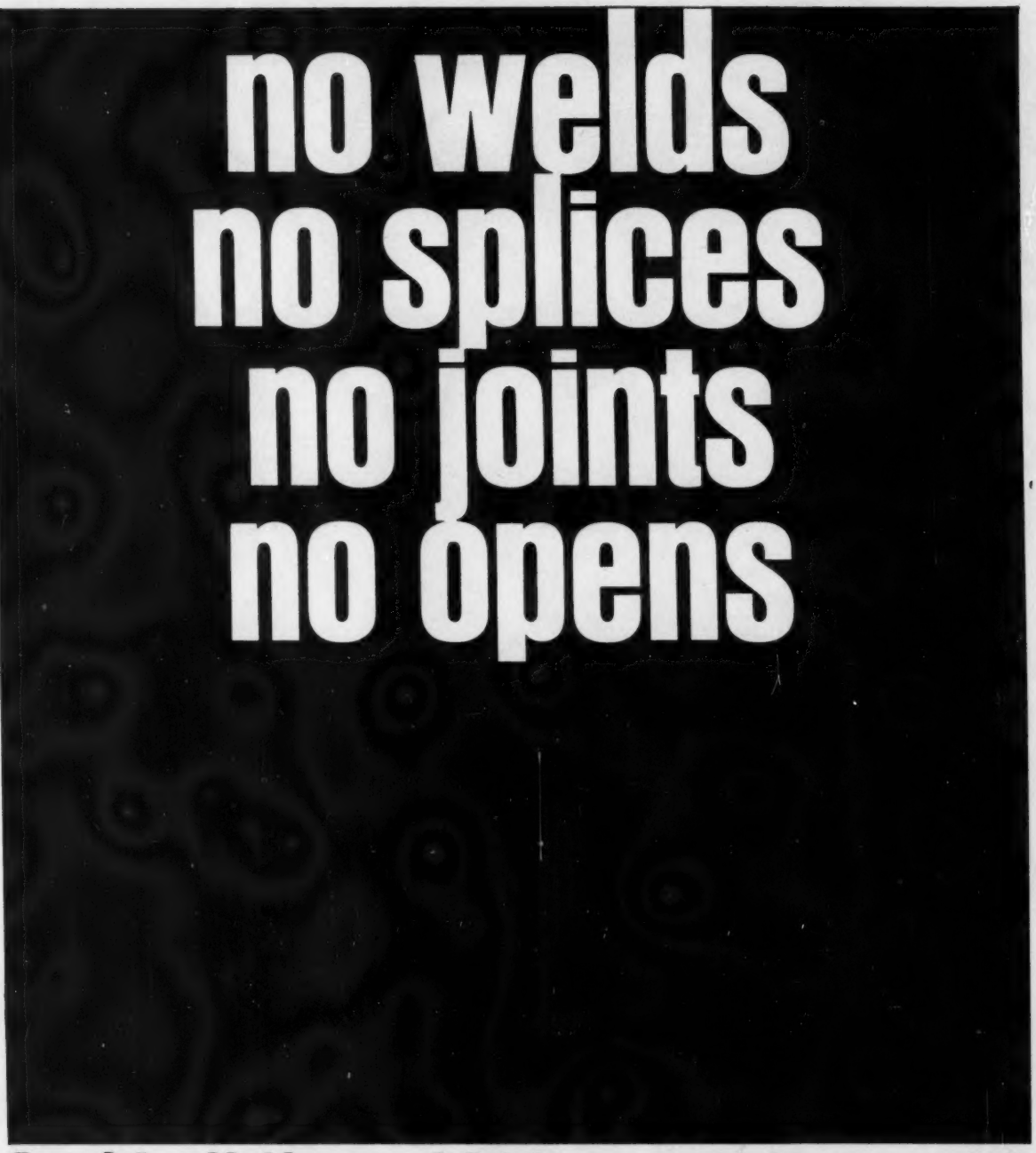
RECOVERY STALLS: Recent weeks have shown a continued tendency toward a stalling in the recovery pattern in the national economic situation. The picture is still a good one statistically, but additional weaknesses continue to crop out. Retail sales don't seem what they should be, with the high current consumer income. Automobile sales have been on the disappointing side recently. Housing starts are not holding. Industrial productions appear to be levelling out. Until recently, the possible steel strike still loomed as a dangerous future factor.

In short, the original super-optimism of the turn of the year is today tempered with a good deal of wholesome question marks. Perhaps this is all to the good, as it will avoid a runaway boom which would have to be paid for later. Nevertheless, it is beginning to undermine the favorable outlook for the near future and to increase the uncertainties of the economic picture. Spending by business for expansion does not appear to be climbing to the heights at first anticipated, nor does there seem much prospect of a prompt increase in such expenditures.

Earnings in 1961 are fairly "cold turkey" by now, but according to the First National City Bank's Economic and Business Letter for March, more than 2000 corporations whose earnings were computed, showed almost an unchanged average from 1960. The last quarter showed substantial increases, nearly 25 per cent, over both the September 1961 quarter and the last quarter of 1960.

Telephone and telegraph companies increased 1961 earnings over the previous year by 6 per cent, according to the bank's figures. Although 1961 earnings showed a relatively unchanged average compared with the previous year, the change in comparisons during the year were quite sharp. For example, the first quarter of 1961 registered an abrupt decline from the same quarter of 1960, which was ultimately offset by gradually increasing earnings during the last nine months of 1961.

no welds
no splices
no joints
no opens



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ALPHADUCT

TELEPHONY Announces Changes In Editorial, Advertising

TWO ORGANIZATIONAL changes in the editorial and advertising departments of TELEPHONY became effective on April 1.

Dan S. Fargo, vice president and managing editor for the past five years, in moving into the advertising department, retains the title of vice president, and adds that of secretary, a post which he has held for four years. Mr. Fargo will be calling on advertising customers and prospects primarily in the eastern half of the United States.

James M. Basham has been appointed to succeed Mr. Fargo as managing editor.

DAN S. FARGO

Mr. Fargo was born and grew up in Chicago. He was in the Navy from July 1943 until May 1946, and received his B. S. in chemical engineering at Northwestern University in 1945. From March through December, 1946, he studied in Northwestern's commerce school.

In January 1947, he joined Triplex Dry Cleaning Machinery Co., where he served as parts manager, salesman and vice president.

In November 1948 he became a salesman with the Standard Register Co.

From June 1949 until December 1950, he was a sales engineer in the Celite (Filtration and Fillers) Division of Johns-Manville.

In December 1950, Mr. Fargo joined TELEPHONY as associate editor. He was named managing editor in August 1952, and was elected a vice president in March 1957.

In night school he has taken a number of courses in journalism, com-

JAMES M. BASHAM

merce and liberal arts. He also has led courses in world politics, and been active in civic and church affairs.

Mr. and Mrs. Fargo live in Evanston, Ill. Mrs. Fargo is currently majoring in English literature at Northwestern University.

Mr. Basham comes to TELEPHONY from the National Safety Council, where he was program consultant in the council's Field Service Department.

Among his responsibilities were preparing and supervising the field department's newsletters, manuals, and booklets, and setting up and conducting training programs for staff and safety council personnel from all sections of the country.

Prior to joining the safety council in January 1961, Mr. Basham was with the public relations department of Illinois Bell Telephone Co. in Chicago for four years, where he served in both the news service and advertising sections.

While at Illinois Bell, he attended the Bell System Management Development Seminar, where he studied supervisory skills, corporate finance and employe communications.

After graduation from the University of Missouri in 1952 with a Bachelor of Journalism degree, he became associated with the La Salle (Ill.) *Daily News-Tribune* as wire editor. In February, 1954, he went with the Ottawa (Ill.) *Daily Republican-Times*. He was feature editor of that paper at the time he joined Illinois Bell.

Mr. and Mrs. Basham live in Geneva, Ill., where they are active in civic and church affairs.

A. P. Murray Elected to Head De Kalb-Ogle Company in Ill.

Arthur P. Murray was elected president of the DeKalb-Ogle Telephone Co., Sycamore, Ill., at a meeting of the board of directors on Feb. 13. Mr. Murray succeeds the late Daniel A. Schaefer who died on Oct. 12, 1961.

Mr. Murray attended Marietta College, Marietta, Ohio.

The new president of DeKalb-Ogle spent nearly 39 years with Illinois Bell Telephone Co., having started with Illinois Bell as an installer in 1923.

He served in the plant department at Illinois Bell as cable splicer, repairman, and testman; and in the personnel department.

Mr. Murray was named north division plant manager for Illinois Bell in 1955, and served in that post until his retirement from Bell.

Old Equipment Donated to Alberta Children's Hospitals

Out-of-date telephone equipment has been donated by Alberta Government Telephones, Edmonton, Alberta, Canada, to children's hospitals to be used for therapeutic purposes, according to *Within Our Borders*, a publication of the Alberta government.

The third of such installations, called the Small Fry Telephone Exchange, was opened recently in Calgary at the Cerebral Palsy Day Clinic. Installation and maintenance of the equipment is handled by the Alberta Government Telephone Pioneers Association, composed of retired telephone men. Two other Calgary locations are already equipped.

The Small Fry exchange consists of a switchboard and four telephones, all operating as they once did in Alberta communities. Children take turns in handling the switchboard and in manning the telephones.

Another children's exchange is scheduled shortly for installation in Edmonton.

Ask and Learn

"I attribute the little I know to my not having been ashamed to ask for information, and to my rule of conversing with all descriptions of men on those topics that form their own peculiar professions and pursuits."—LOCKE.

Courts and Commissions

SBT&T Held Not Liable in Injury Suit Filed in N.C.

Judge Allen H. Gwyn in Forsyth County Superior Court at Winston-Salem, N.C., on Mar. 23 took under advisement a motion to set aside a $19,500 verdict awarded to a youth and his father for injuries suffered at a location where telephone pole-setting was in progress.

The verdict awarded by the Forsyth County jury included $15,500 to Thomas H. Tayloe, 17, who was injured by a dynamite cap explosion, and lost parts of two fingers; and $4,000 to his father, Thomas E. Tayloe, for medical expenses. Evidence revealed that the youth picked up the cap and was examining it when it exploded.

The Tayloes had filed suits for $42,500 against Southern Bell Telephone & Telegraph Co. and Z. A. Sneeden's Sons, Inc., a firm that was installing telephone poles in the county, under contract with Southern Bell.

The jury released Southern Bell from liability; and found that the youth was injured not by his own negligence, but because of the negligence of the Sneeden firm.

It was also revealed that Sneeden's was not acting as agent for Southern Bell, which released SBT&T from liability.

Must Improve N.Y. System; Consolidation Denied Five

The New York Public Service Commission on Mar. 30 ordered Jasper-Steuben Telephone Corp., Jasper, to begin immediate improvement of its system and to submit, within six months, a detailed plan for a long-range plant rehabilitation program.

At the same time, the commission denied the petition of The Fillmore Telephone Co., to acquire Jasper-Steuben, and also Hammondsport Telephone Co. The West Valley Telephone Co., and The Pulteney-Branchport Telephone Co., Branchport, consolidating all five companies into a new company to be known as Iroquois Telephone Corp. (TELEPHONY, Feb. 18, 1961). The five companies mentioned are commonly owned and have administrative headquarters at Dryden.

The New York commission's order to Jasper-Steuben results from a proceeding initiated after complaints had been received from company subscribers alleging inadequate service and facilities. The company serves 218 stations through a dial office at Jasper and 76 other stations through an office at Greenwood. Intercompany long distance connections are possible, however, only through the exchange of Greenwood Telephone Association, an Independent cooperative.

The company, according to the Mar. 30 commission order, is required to make necessary tests of its equipment, install a standby ringer at Jasper, and begin a systematic program to train employes in proper maintenance methods and practices.

Jasper-Steuben is also directed to canvass its present and potential subscribers to determine their interest in receiving extended area service and report the results of such a survey.

Examiner Thomas J. Brady stated that evidence "shows beyond question that the service provided by Jasper is unsatisfactory."

In the second proceeding of the New York commission, Fillmore Telephone proposed to change its name to Iroquois Telephone Corp. after acquiring ownership of the four other companies; to issue 21,500 shares of $10 par value stock and borrow $1,551,000 from the Rural Electrification Administration with which to finance the transactions and to improve, expand or otherwise rehabilitate the plants.

Fillmore Telephone, formed in 1900, provides dial service to about 1,100 stations.

Hammondsport Telephone was organized in 1906, and serves about 900 stations in and near Hammondsport.

Jasper-Steuben Telephone, incorporated in 1953 under the present owners, has since expanded its territory to include that formerly served by Rexville Telephone Association and also additional areas in the towns of Cameron, Rathbone and Woodhull.

Pulteney-Branchport Telephone was formed in 1903, and provides manual service to about 200 stations.

West Valley Telephone, incorporated in 1905, provides dial service to about 400 telephones.

The petitioners claimed the proposed consolidation into Iroquois Telephone Corp., was designed to enable the procurement of the REA loan to finance plant improvement.

Commission member Brady, however, felt that improved service would be possible, only "through a substantial increase in the present rates to subscribers."

He observed also that the petitioners' proposals would result in debt and equity securities greater than the value of the assets to be acquired, or for telephone plant already constructed."

Mr. Brady concluded that the companies failed to prove their proposals "feasible and in the public interest."

The commission then denied the petitions without prejudice to further consideration upon submission of new evidence.

General of NW Withdraws Rate Request in Washington

A request by General Telephone Co. of the Northwest, Spokane, for approval of a rate increase of $398,000, filed with the Washington Utilities & Transportation Commission last June (TELEPHONY, July 8, 1961), has been withdrawn, according to A. J. Barran, president.

Mr. Barran said that after several postponements, it was decided to take back the request to "bring our cost and income figures up to date, take a new look at our capital requirements" and make another request later in 1962.

The firm's last general rate increase was authorized in 1959.

Authorize Two Increases, Approve Sale in Minnesota

The Minnesota Railroad & Warehouse Commission on Mar. 26 gave Mankato Citizens Telephone Co. permission to charge interim increased rates after Apr. 1 and permanent rates on completion of its rehabilitation project.

The Mankato company, since its last rate action in 1956, has gained 3,000 stations, whose expansion required an increased plant investment of approximately $1,672,000. The company also has had increases of $120,000 annually in wage costs since 1956.

The company now proposes to spend

approximately 2 million dollars for a new headquarters building in Mankato and for complete rehabilitation of the existing automatic equipment in the present Mankato headquarters. The company will borrow much of this 2 million from a private lending agency.

It now provides dial service to exchanges at Mankato, North Mankato, Mapleton, Madison Lake, Eagle Lake, Good Thunder, St. Clair, Garden City and Pemberton, serving approximately 18,000 stations.

Under interim rates, the company's net income will rise from $225,197 to $311,006. With permanent rates the company's net income will be $343,780.

Rate of return under old rates was 4.55 per cent on the interim rate base of $4,944,862. With interim rates it will be 6.28 per cent. Rate of return with permanent rates will be 6.42 per cent on a rate base (after rehabilitation) of $5,349,061.

Former rates, interim rates and rates after conversion are as follows:

Mankato and North Mankato	*Old*	*Interim*	*After Conversion*
Business			
One-party	$ 9.00	$ 10.00	$ 11.00
Two-party	7.80	8.75	9.75
Four-party	6.75	7.75	8.75
Multi-party rural	4.85	5.75	6.75
Residence			
One-party	4.50	5.00	5.75
Two-party	3.85	4.25	5.00
Four-party	3.25	3.60	4.00
Multi-party rural	3.85	4.25	5.00
Mapleton			
Business			
One-party	6.85	7.65	8.25
Two-party	6.00	6.75	7.50
Multi-party rural	4.50	5.25	6.00
Residence			
One-party	3.65	4.50	5.00
Two-party	3.15	4.00	4.50
Four-party	2.65	3.50	3.75
Multi-party rural	3.50	4.25	4.75
Good Thunder, Madison Lake, Eagle Lake, St. Clair, Garden City & Pemberton:			
Business			
One-party	6.00	6.75	7.50
Two-party	5.25	6.00	6.75
Four-party	3.15	3.95	4.50
Multi-party rural	4.50	5.25	6.00
Residence			
One-party	3.25	4.00	4.50
Two-party	3.00	3.75	4.25
Four-party	2.65	3.50	3.75
Multi-party rural	3.50	4.25	4.50
Multi-party rural	3.25	—	—

Also in Minnesota, the Felton Telephone Exchange Inc. was given permission to raise rates on conversion to dial of its Felton exchange and to establish rates for its proposed Borup exchange. The company also intends to provide extended area service between Felton and Borup, between Borup and the Ada exchange of the Norman County Telephone Co., between Felton and the Fargo-Moorehead exchange of the Northwestern Bell Telephone Co. The rehabilitation project, which is being undertaken with the aid of a $325,000 Rural Electrification Administration loan, is scheduled for completion in December 1962.

Presently the company operates a common battery exchange at Felton serving 276 stations. At the end of five years, it expects to serve 381 stations through its rehabilitated system.

Under its current rates, the company realized a loss of $7,699. With its approved rates, the company will have net income of $7,950, giving it a 2.54 per cent rate of return on its $312,257 rate base.

Present and approved rates are as follows:

	Felton		
	Current Rates		*Approved*
	Magneto	*Common Battery*	
Business			
One-party	$ 5.00	$ 5.50	$ 13.10
Two-party	4.50	—	11.50
Multi-party rural	4.00	4.50	8.50
Residence			
One-party	3.25	3.75	8.50
Four-party	2.50	—	6.50
Multi-party rural	3.00	3.50	7.50

Approved rates for Borup are as follows:

Business	
One-party	$ 11.50
Two-party	9.50
Multi-party rural	7.50
Residence	
One-party	$ 7.50
Two-party	6.25
Multi-party rural	6.50

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Also on Mar. 26 the commission approved the sale of the Marcell Township Telephone System to the People's Telephone Co. Inc., Bigfork. The Marcell System serves 122 stations.

N. C. Company Asks Authority To Increase Its Rates

Eastern Rowan Telephone Co. Inc. of Granite Quarry, N. C., asked the North Carolina Utilities Commission on Mar. 23 for permission to increase its rates.

It said its present rates are insufficient to provide funds needed for operations and to permit it to attract capital it needed to expand.

The company, which serves about 2,000 subscribers, proposed that its monthly charges for one-party residence service be increased from $5.10 to $6.50, its one-party business service from $9.80 to $11.80, and that comparable increases be allowed for two-party, four-party and multi-party service.

NW Bell Told to Reduce Neb. Tolls; New Services OK'd

The Nebraska Railway Commission on Mar. 27 ordered Northwestern Bell Telephone Co. to submit a revised schedule of intrastate toll rates effecting a reduction.

The order was based on a new arrangement whereby a transfer of revenue requirements in the amount of $350,960 will be effected between intrastate and the interstate component of the company's rate base.

•

The commission on Mar. 14 also approved new service offerings for Northwestern Bell as follows:

For Call Director telephones, 12 push-button and 12 lamp or speakerphone modules are now available, in addition to the regular six-module equipment. A monthly charge of $3.00 will apply for the 12-lamp module and regular existing tariff charges will apply for the Speakerphone or 12 push-button modules. Regular change charges will apply for changing from a six-button to a 12-button module.

In connection with home interphone systems, a montly charge of $1.00 and an installation charge of $5.00 was established for each additional speaker microphone.

A new-type universal cord switchboard is now offered at $125 per month and an installation charge of $150, with provision for a five-year termination charge of $1,800. This switchboard may be used either as a multiple or non-multiple type with either manual or dial PBX service. Special features include illuminated non-locking push-button key operation instead of lever keys; and winking cord signal which indicates stations being rung but not answered.

•

On the same date the Curtis Telephone Co. was authorized to charge 25 cents per month for color telephones, 50 cents per month for compact telephones and $9.00 per month for a PBX switchboard with three trunks and seven lines, in addition to $7.50 each per month for the trunks.

Seek to Determine if General Can Appeal N.M. Tax Decision

A case before the New Mexico Supreme Court seeks to determine whether or not General Telephone Co. of the Southwest, San Angelo, Tex., has a right to appeal a tax evaluation decision of the New Mexico Tax Commission.

A 1959 New Mexico law allows corporations subject to state evaluation of their property to appeal commission decisions if the decisions are made in "formal" hearing.

The question before the court is whether or not the company in 1961 asked for a formal or informal hearing.

The company had requested a hearing on its 1961 assessments which came to 4.9 million dollars.

The Santa Fe District Court has held that General Telephone did ask for a formal hearing in compliance with the law.

Tax commission attorney Adolf J. Krehbiel has argued that the company failed to apply specifically for a formal meeting within the 15-day limit after notification of assessment.

He said the company's letter requesting a hearing failed to designate which kind. This, he contends, left it to the commission's discretion.

General paid its 1958-59 New Mexico property taxes under protest recently at the order of the state supreme court. Its 1960 taxes are still in litigation.

A law was passed at the February special legislative session allowing courts to assess a corporation for part of the state evaluation and submit the rest under protest.

Act on Loan Request, Rate Application in Arkansas

In an action by the Arkansas Public Service Commission, on Mar. 14 the Union Telephone Co., Smackover, was granted permission to borrow $90,000 from the Bankers National Life Insurance Co. of Montclair, N.J.

•

The commission also on Mar. 28 was to have heard the application of the Walnut Hill Telephone Co., Lewisville, for a permanent rate increase at that exchange. Temporary rates were in effect at the time of the hearing.

Oregon Cooperative Given Permission to Borrow Funds

The Oregon Public Utility Commissioner on Mar. 28 approved the application of the Scio Mutual Telephone Association to borrow $65,000 from General Dynamics Corp.

The cooperative presently furnishes magneto service to 520 members.

Proceeds from the loan will be used to purchase and install a new dial switchboard, telephones and cable facilities.

The capital ratios as of Dec. 31, 1961 and pro forma after giving effect to the new financing are as follows:

	Dec. 31 1961	Pro. Forma
Debt		66.1%
Membership equity	100.0%	33.9
Total	100.0%	100.0%

Anchorage, Alaska City Council Rejects Three Purchase Bids

The Anchorage (Alaska) City Council has rejected as too low three bids to purchase the city of Anchorage's telephone system (TELEPHONY, Nov. 11, 1961). The council also authorized a survey to be made of the true value of the system.

Purchase proposals had been received from Alaska Telephone Corp. (a subsidiary of General Telephone Corp.) for 9.5 million dollars; from Sarno Associates for 8.3 million dollars, and from Dolan P. Hume for 7.5 million dollars.

The Sarno offer was raised one million dollars to match Alaska Telephone Corp.'s bid in a telegram delivered to the manager and the city council. The telegram also included an offer to spend any amount found necessary to meet community needs for expansion.

Anchorage councilmen held, however, that none of the offers were in the best interest of the citizens of the community.

Two Companies File for Incorporation in Ariz.

Articles of incorporation have been filed in Arizona by two companies, as follows:

The Mohave Telephone Co., doing business in Phoenix. Incorporators are Milton F. Walling, Baldwin Theil, and Elmer Burson, all of Phoenix. William A. Holohan of the same city is statutory agent.

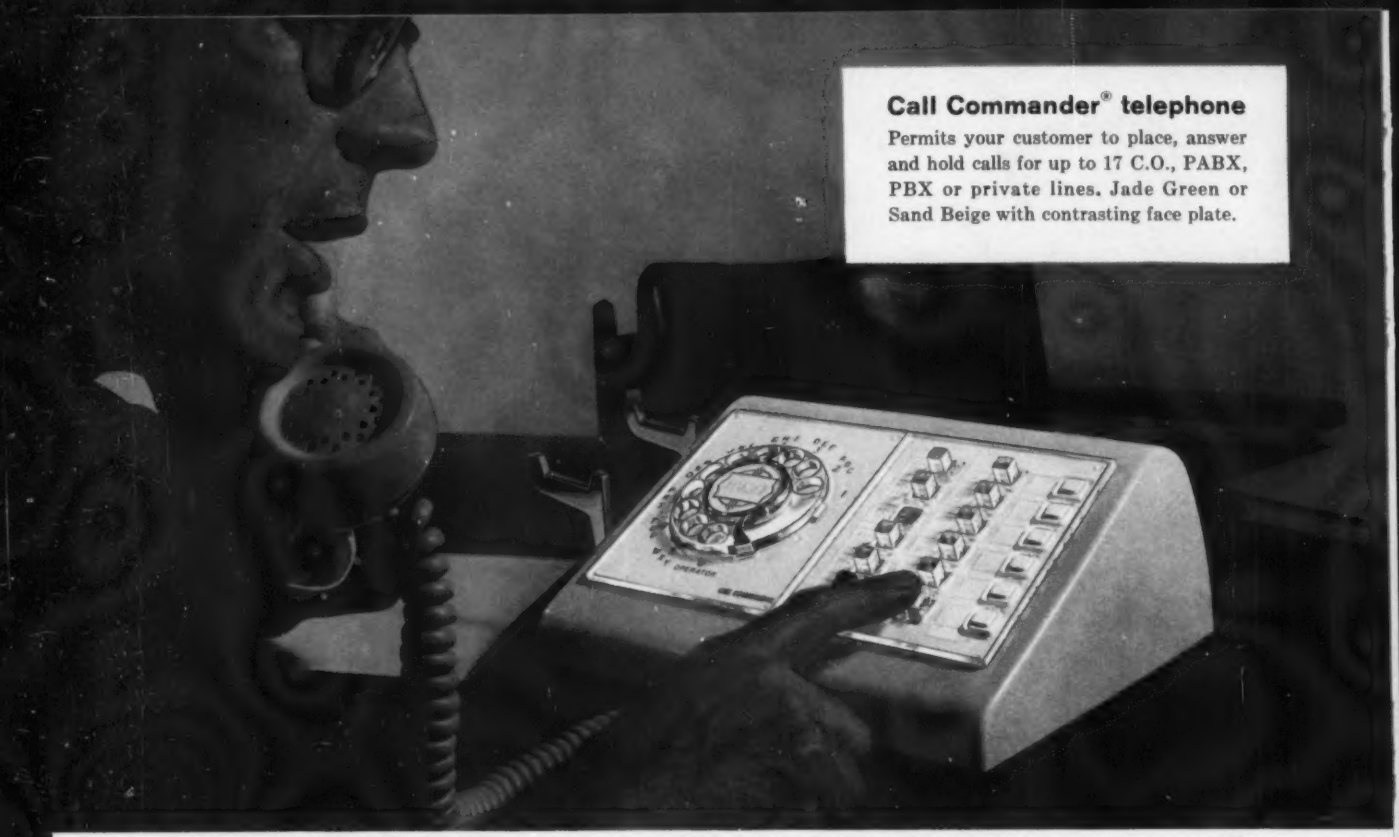
The Rio Virgin Telephone Co., a Nevada corporation, has filed for incorporation to operate in Mohave County, Ariz. Statutory agent is Joseph Reese of Litchfield, Ariz.

Bond Issue Approved, to Hear Incorporation Plea in Mo.

The Missouri Public Service Commission has given Western Light & Telephone Co. Inc., Great Bend, Kan., permission to issue and sell 4 million dollars' worth of 4⅞ per cent first mortgage bonds due Apr. 1, 1992.

(Continued on page 38)

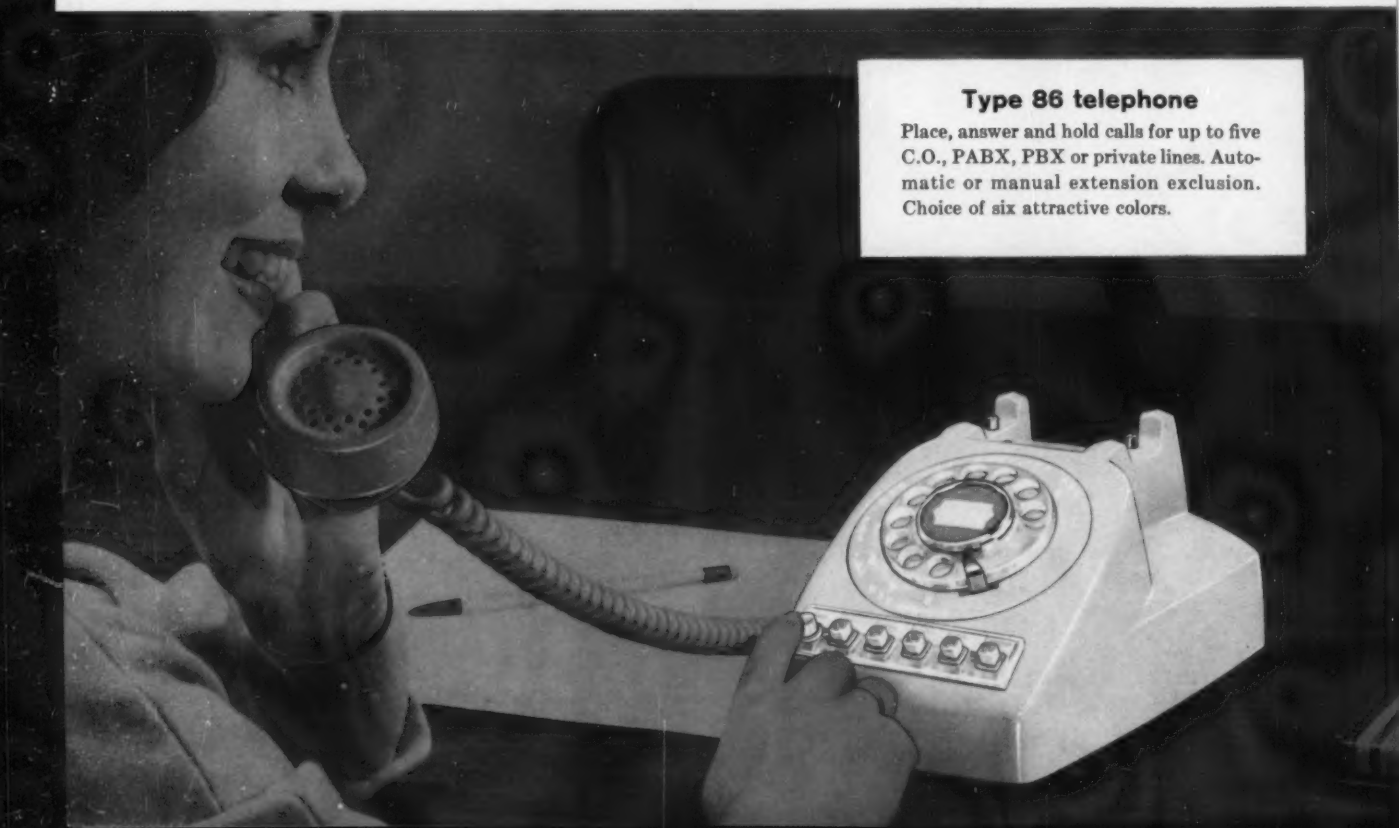
The Peoples Telephone Corp., Butler, Pa., reported a progress milestone when, on Mar. 15, the company installed its 35,000th telephone, a wall instrument in color, in the home of Mr. and Mrs. Ralph H. Miller of Meridian, Pa. Shown in photo are: S. E. Phillips, vice president and general manager of the company, observing the event; the Millers; and installer Floyd Neigh. The company has experienced rapid progress in construction of exchanges, C.O. buildings, pole line and cable additions to provide a high grade of service. As recently as 1954, the Peoples company recorded its 25,000th installation.



Call Commander® telephone

Permits your customer to place, answer and hold calls for up to 17 C.O., PABX, PBX or private lines. Jade Green or Sand Beige with contrasting face plate.

10-A1 KEY SYSTEM provides custom



Type 86 telephone

Place, answer and hold calls for up to five C.O., PABX, PBX or private lines. Automatic or manual extension exclusion. Choice of six attractive colors.

With our expanded key system, you can provide business customers with custom communications, inside or outside! Just take a look at the many features that this system offers:

Smart, modern telephones. You can offer your customer the Type 86 phone or the new Call Commander phone. Both have lighted push-buttons which act as line signals.

Up to 17 lines! Your subscriber can place, answer and hold calls for up to 17 C.O., PABX, PBX or private lines at any station.

Tie lines for linking a station on one key system with another station on a distant system.

Selective dialing for up to 36 intercom stations. Single or two-link talking arrangement.

Privacy on intercom links.

Conference calls. Up to six other inside stations may be called simultaneously or consecutively. You can also add another inside station to an outside call!

Camp-on feature. Reserves busy line for caller and automatically connects when line is free.

communications for your business subscribers!

Do you use this expanded key system as a revenue-builder?

All over the country, telephone men are discovering that they can earn extra revenue by leasing the 10-A1 to business subscribers. Make a check in your community. Find out how many prospects you have for this business communications system. Then—go out and sell the systems!

If you have any questions about the 10-A1, contact your AE representative. He'll be glad to help you. He can also furnish you with sales aids to help you promote the 10-A1 to your customers. To reach him, write Automatic Electric Sales Corporation, Northlake, Illinois.

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A new field-tested leak detection device for the communication industry

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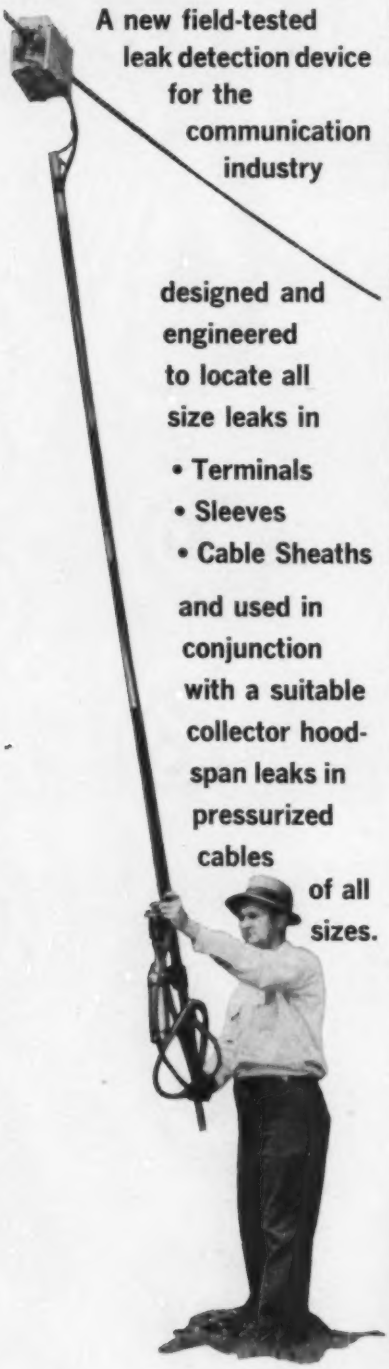


For further information write

Turner
CORPORATION
SYCAMORE, ILL.

The commission also has before it the application of B&M Telephone Co. to incorporate and to transfer its certificate to render telephone service to the new corporation.

Ask Purchase OK in Illinois

The Illinois Commerce Commission on Mar. 24 received the petition of the County Telephone Co., Ingraham, to purchase the Farmers Mutual Telephone Co., Dundas, and the Calhoun Independent Telephone Co.

Approve Loan in Missouri

The Missouri Public Service Commission on Mar. 23 approved the application of the Granby Telephone Co. to borrow $40,000 from General Dynamics Corp.

Ask Purchase OK in Ind.

The Princeton Telephone Co. has asked the Indiana Public Service Commission for permission to purchase the Somerville Telephone Co.

Bell COMMUNICATIONS CENTER Has "Latest" for Home, Office

THE SOUTHERN BELL Telephone & Telegraph Co. on Mar. 6 opened its Communications Center in Atlanta's new Merchandise Mart for a preview showing to members of the press.

The center, displaying a variety of communications equipment and services, is designed to show communications in real-life situations.

Operated by the marketing department, it will serve Southern Bell's nine-state area in a demonstration of services to customers and as a training center for marketing personnel.

Representatives of large communications users will be brought to Atlanta for sales presentations and communications seminars, where actual operating systems, tailor-made by SBT&T to customer needs, will be set up and demonstrated.

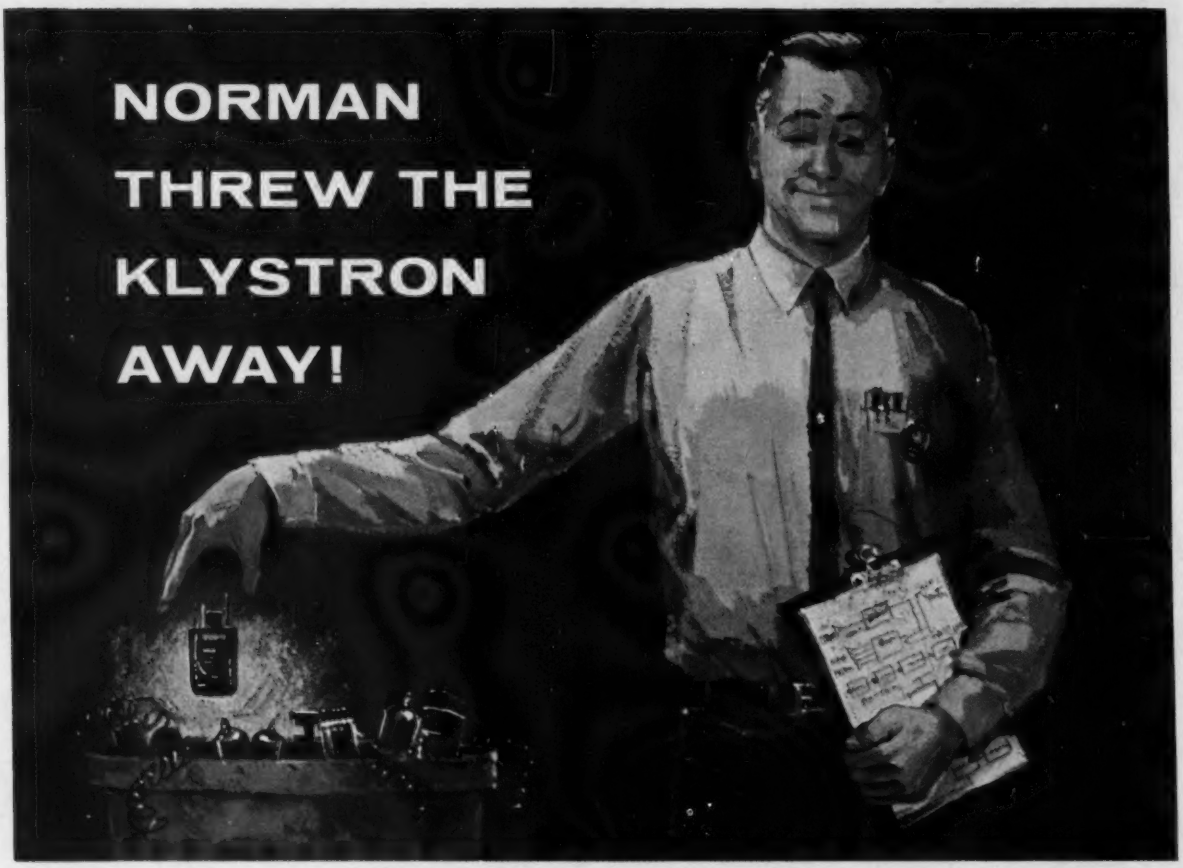
Featured is a showroom with data transmission machines located so as to simulate the home office and branch offices of a business organization.

Customers can observe the company-wide operations in business data transmission in the scaled-down layout.

To add realism and show use under actual conditions, model offices, con-

Data transmission service equipment is featured in Southern Bell's Communications Center in Atlanta. Data transmission service and a variety of data sets permit machine-to-machine "talking" at the rate of thousands of words per minute. Utilizing punch and magnetic tape, this service has aided the processing of payroll information, sales orders, invoices, accounting and billing information and other business data.

Southern Bell's Communications Center includes a model operational one-digit dialing and message-waiting service for hotels and motels. Full-size motel room and cashier "check out" desk is set up to show new telephone services.



(When he says "TOTAL SOLID STATE MICROWAVE" he really means it!)

Norman is our Chief Microwave Engineer and he, with his team of designers, has overcome the last hurdle in the development of RCA CW-60 Total Solid State Microwave Equipment. Not only have they tossed out the *klystron*, they have also eliminated heat sinks, plungers, high voltage power supplies, motors, blowers, AFC loops, level stabilizers and other critical components that are subject to frequent outages. Instead of headaches, the CW-60 provides crystal controlled heterodyne repeaters, extremely low power drain, high channel capacity, and less floor space (a complete repeater station is housed in half a rack).

Find out what this new microwave equipment can do for you in your operation. Get the complete CW-60 Microwave story from your nearest RCA Microwave Representative; or send the coupon for specifications:

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"FORESTER" HEAVY-DUTY BRUSH CUTTER — with exclusive patented "Slide Shift" — lets you switch from "easy" to "hard" to "toughest" cutting simply by shifting the handle. Takes the place of 3 ordinary pruners. 2 sharp, fine-steel blades give quick-healing, clean cuts, make work easy for operator. 2 models — 0290F — Capacity 1½" green wood; 0390F — Capacity 2" green wood.

PORTER POLE PRUNERS for utility line clearance. 4 models — for all work. Lightweight model — short and long arm types, with and without pulleys. Cut up to 1" green wood. Available with Solid or Jointed Poles.

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ference rooms of the home and a motel room have been set up with telephones and other communications installed and operating.

One of the attractions in the "Telephones of Tomorrow" room of Southern Bell Telephone & Telegraph Co.'s Communication Center in the Atlanta, Ga. Merchandise Mart, this "picture telephone" is for looks only—it is not operational. The wall model features a phonovision screen, magnetic roll tape and electronic pushbutton dialing and other conveniences of tomorrow's telephones.

Other attractions are a "Telephones of Yesterday" room, showing early telephones and a switchboard; a "Telephones of Tomorrow" room, showing designers' concepts of future telephones; and wall-size displays on satellite communications and communications for defense.

D. A. Brown Named Treasurer Of General of Florida

Marshall K. Taylor, president of General Telephone Co. of Upstate New York, Inc., has announced the appointment of Donald A. Brown, vice president-revenue requirements and secretary-treasurer, to the position of treasurer of the General Telephone Co. of Florida, effective May 1.

Mr. Brown joined General of Upstate New York in 1949. The following year, he was named assistant secretary-treasurer and in 1951, became secretary-treasurer. He was also named director of revenue requirements in 1958.

In 1961 Mr. Brown was promoted to vice president revenue requirements and has held the same position in four affiliated General System companies: Orange County Telephone Co., Middletown, N. Y.; Tri-State Associated Telephone Corp., and Delaware Valley Telephone Co., Port Jervis, N.Y. and the General Telephone Co. of Vermont, Inc., Johnstown, N. Y.

Born in West Medford, Mass., the General company executive was graduated from Bowdoin College with a bachelor of science degree and for a short time, was instructor in economics and sociology at Keene Normal School.

He entered the utilities field in 1928 with Stone and Webster. In 1930, he was transferred to Baton Rouge, La., and served as statistician and insurance director there for the local utilities for 12 years.

In 1942, he joined the statistical department of the Royal Eagle and Globe Indemnity Insurance Cos. in New York City. He accepted a position in 1944 with the management consulting firm of Standard Research Consultants, Inc., where he served until 1949 when he joined the General Telephone Co. of Upstate New York, Inc.

Mr. Taylor said a successor to Mr. Brown will be named at a later date.

USITA and Bell Comment on Separation Procedure Changes

The United States Independent Telephone Association Settlements and New Services Committees on Mar. 30 issued the following report jointly with Bell System representatives concerning Independent company studies and certain changes in separations procedures:

"Recognizing that certain changes in separations procedures will be effective Apr. 1, 1962, industry representatives are in accord that it is appropriate to reflect these changes as of the same date in inter-changed toll telephone settlements insofar as is practicable, and recommend the following:

"Average Schedules:

"That the revised average settlement schedules, based on the results of current nationwide studies, be effective 60 days prior to the date of a joint recommendation to the industry covering their application to interchanged toll telephone traffic, but in no event earlier than Apr. 1, 1962. These nationwide studies will be adjusted to reflect the changes in separations procedures.

"That if the joint recommendation is made after June 1, 1962, the net effect of the changes in separations procedures, as reflected in the new average schedules, be effective six months prior to the date of the joint recommendation to the industry, but in no event earlier than Apr. 1, 1962.

"Special Study Companies:

"That the effect of the changes in separations procedures for the special study companies be reflected when an individual company study is recast or when a new individual company study is made."

HERE'S WHY HOLAN'S NEW 5300-S DIGGER DELIVERS ALL THE TORQUE THAT'S PROMISED

Holan's new 5300-S digs deep and fast in tough terrain because it develops *all* the torque that's promised and promises only the torque that's usable – auger torque.

Neat, compact and weighing less than 300 pounds, the 5300-S delivers from 2540 to 2800 lbs./ft. auger torque using an S.A.E. PTO and a 2,000 psi hydraulic system. With a split-shaft PTO, it delivers even more—4140 to 4600 lbs./ft.

Torque based on input horsepower to the hydraulic pump is no measure of earth borer capacity – in fact, it's misleading. Holan calculates auger torque by determining hydraulic horsepower delivered to the transmission gearing – fully allowing for inherent efficiency losses in pump, connecting lines, and hydraulic motor.

That, in a nutshell, is why the 5300-S – like every other Holan digger – lives up to its promised torque.

A full-floating planetary gear system evenly distributes gear loads and antifriction bearings are used on fixed shafts. The main hydraulic valve operates all phases of the digger, providing metered speed control. Encased in an impact resistant ductile iron housing, the 5300-S handles all heavy duty augers and can be used on any Holan derrick.

Write us today – or call your Holan Field Representative – for complete details about this Holan digger that delivers all that's promised.

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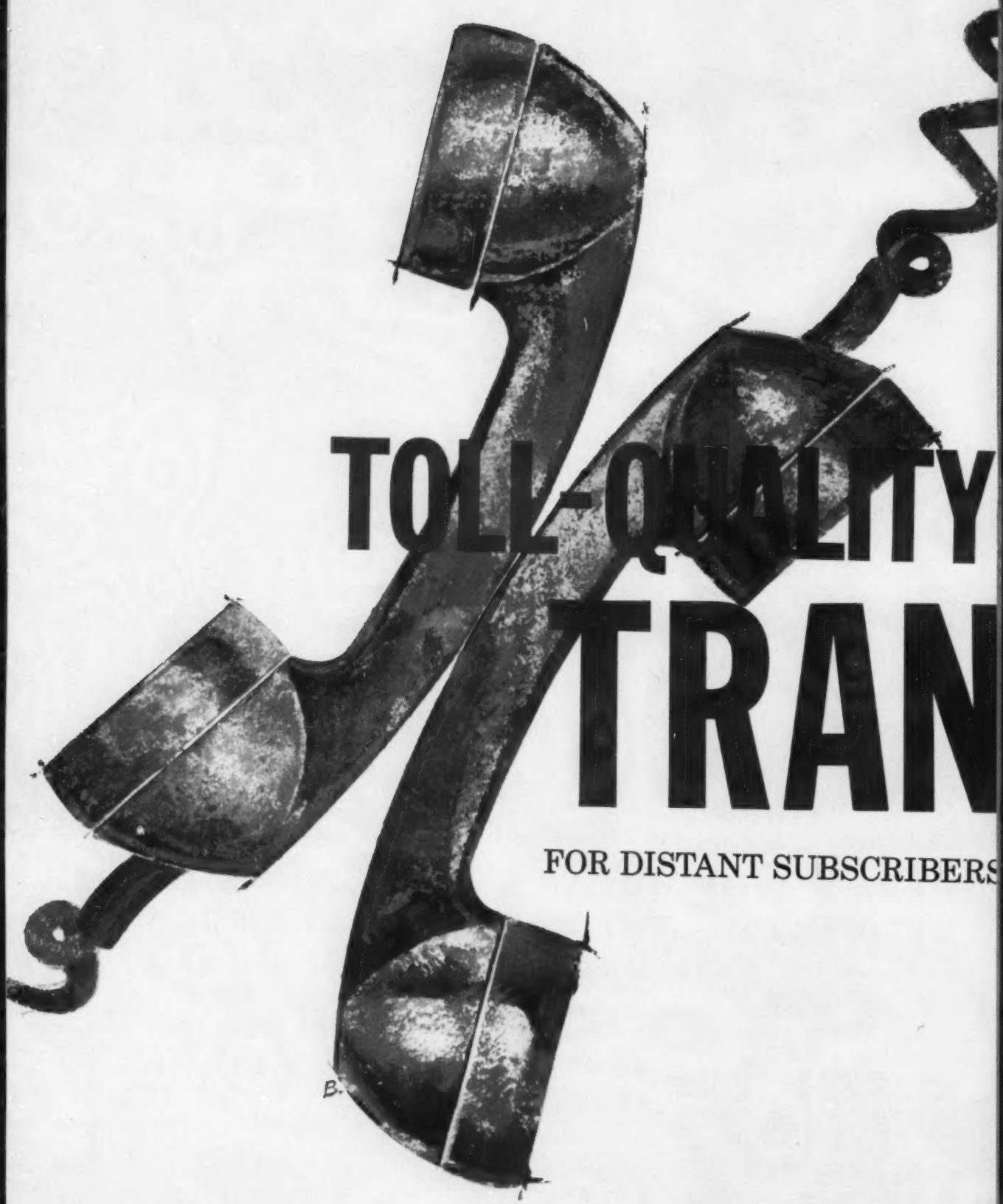

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when capital is tied-up, and new service demands exist...

independents start thinking "carrier," in order to get maximum use from existing facilities. And, when you think "carrier," you naturally think "Kellogg"—the leader in carrier design, development and manufacturing. Without a doubt, it's the most complete, and most completely field-tested carrier line in the industry.

ITT Kellogg K-31 and K-32 Carriers offer more exclusive features, yet are lower in cost.

K-31 RURAL SUBSCRIBER CARRIER

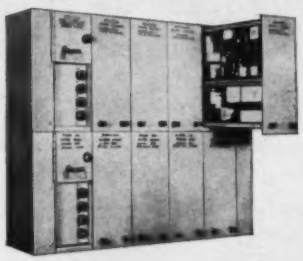
Provides high grade, low cost service between a central office and rural subscribers on single or multi-party lines. Up to 8 channels. Can be utilized to meet future growth needs.

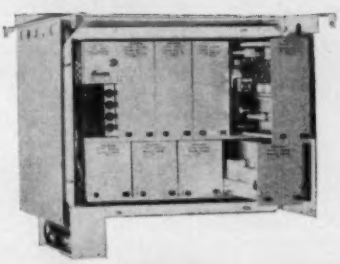
K-32 OPEN WIRE TRUNK CARRIER

Provides low cost EAS or toll service between two central offices. Also up to 8 channels.

And now, system mileage can be *doubled* with one low-cost repeater, *tripled* with two repeaters!

Next time you get caught by sudden new service demands, conserve your capital: find out about carriers, from carrier experts. Call your ITT Kellogg representative or write the ITT Kellogg Regional Office nearest you.





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IN THE NATION'S CAPITAL

Continued from page 18

maintained that the plan would *not* provide any incentive for business to update its facilities.

The plan would enable businessmen to subtract up to 7 per cent of the money invested in new equipment (excluding buildings) which would have a useful life of at least eight years. For a lesser useful life, the credit is graduated to lower rates. The tax credit for public utilities would be 3 per cent compared to the 7 per cent allowed other industries. The business groups claim no one is going to rush out and buy new equipment because of this "incentive."

The withholding tax on dividends would require corporations and financial institutions to withhold 20 per cent of dividends as well as interest on bonds and savings accounts.

Expense accounts would be more closely scrutinized under the bill and greater documentation of expenditures would be required. Only those expenses which directly further business would be allowed. Dues for social and athletic clubs would be deductible only if half the club's use could be shown to be for business purposes.

Prognosticators do not envision any trouble for the tax revision bill in passing the Senate, but we're not so sure. The Senate is admittedly more prone to do the White House's bidding than the House, but the bill must first clear the Senate Finance Committee headed by arch-conservative Harry Byrd (D., Va.). The Senate Finance Committee has hearings underway on the bill and more fireworks can be expected before all the commas fall into place.

Brazilian Grab Settlement Stalled

Many legislators on Capitol Hill are concerned about the seizure of ITT facilities by the Brazilian state of Rio Grande do Sul, far more concerned than the Administration seems to be. In a nation which has fed off the U. S. largesse so long and stands to reap more than any other nation under the "Alliance for Progress," the seizure is almost incomprehensible. Rio do Sul Governor Leonel Brizola offered ITT $400,000 for the 8-million-dollar property. Quite a bargain. In fact, it's a steal.

Some in Congress, irked by the high-handed Latin action, think that this country should cut off aid to Brazil until the settlement is worked out more equitably. The Administration doesn't think so. After all, they reason, we can't penalize the country because one of its states does something we don't like. Left-wing Brazilian President Joao Goulart *did* say he was "embarrassed" by the expropriation and that *is* something. The fact that Governor Brizola is his brother-in-law must have increased the "embarrassment."

Negotiations have been going on in Brazil attempting to establish a reasonable price for the seized property. ITT representatives, Brazilian government officials, Rio do Sul officials and U. S. Embassy personnel have been unable to reach a solution.

ITT reported: "Regretfully, we are unaware of any progress being made in efforts to reach a solution that would provide prompt, adequate and effective payment for our property that was illegally seized under the laws of Brazil.

YOUR ONE WAY TICKET

North Electric PREMIUM AUTOLLIZER® toll ticketing

As you well know, profit on this toll call is not the charge (bottom line) but what you keep after all costs of doing business are taken out. When you utilize the cost saving Premium AuTollizer on person-to-person, collect, or third party calls, a larger share of the charge becomes profit. Operating Companies equipped with North Electric Premium AuTollizer have its advantages proved daily in dollars and cents . . . by increased revenue, reduced operator load, and reduced handling costs. In addition, Premium AuTollizer equipment puts you in the nationwide DDD network with full capability to handle all classes of toll calls.

With profit on toll calls being measured in pennies these days, it seems wise to employ equipment that will give you the greatest profit break.

You can get your "one way ticket to profit" from The Dynamic Force in the Telephone Industry.

OTHER DIVISIONS:
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NORTH ELECTRIC
TELECOM DIVISION • GALION, OHIO

"The proposals being advanced as 'solutions' are verbal formulas that lack substance because they do not include the Brazilian federal government support necessary to give them meaning. . . . "

We wonder how long it would take for Goulart's "embarrassment" to crystallize into remedial action if the U.S. cut off all aid to Brazil until this matter was worked out.

The Brazilian president is apparently in for a series of "embarrassments". While he was preparing for an official visit to Washington, another Brazil state, Guanabara, seized the Canadian-owned Brazil Telephone Co. of Rio de Janeiro. The United States and Brazil recently concluded an agreement whereby Guanabara will receive $2,430,000 in "Alliance for Progress" funds.

Gambling Curb Urged

The Senate Rackets Subcommittee has urged Congress to hamstring organized gambling by cutting its lines of communication. The subcommittee concluded in a 48-page report that local law enforcement cannot handle "the grave internal threat of organized crime, much of it financed by gambling earnings."

The subcommittee recommended that Congress outlaw the gambling "wire services," which it called the "Achilles heel" of bookmakers. The subcommittee said in using the term "wire service," it was not referring to legitimate news agencies.

Chairman John L. McClellan (D., Ark.) introduced a bill to prohibit the distribution of horse race information in any state which bans off-track betting. (Only Nevada allows off-track betting.)

New Agency Proposed

Another entry has been announced in the "let's-have-a-new-federal-agency" sweepstakes. The President has requested authority to create an office on Science Management to coordinate the nation's scientific effort. The new agency would operate as an adjunct to the White House.

REA Revolving Fund Killed

The Subcommittee on House Agricultural Appropriations turned down the Rural Electrification Administration's request for a revolving fund from which to make its loans. Under the proposal, REA would have been able to re-lend money received in payment of its previous loans instead of having this money deposited in the U. S. Treasury.

The committee also rejected a restriction urged by electric utility companies which would have prevented REA from making loans for electric generating plants and transmission lines.

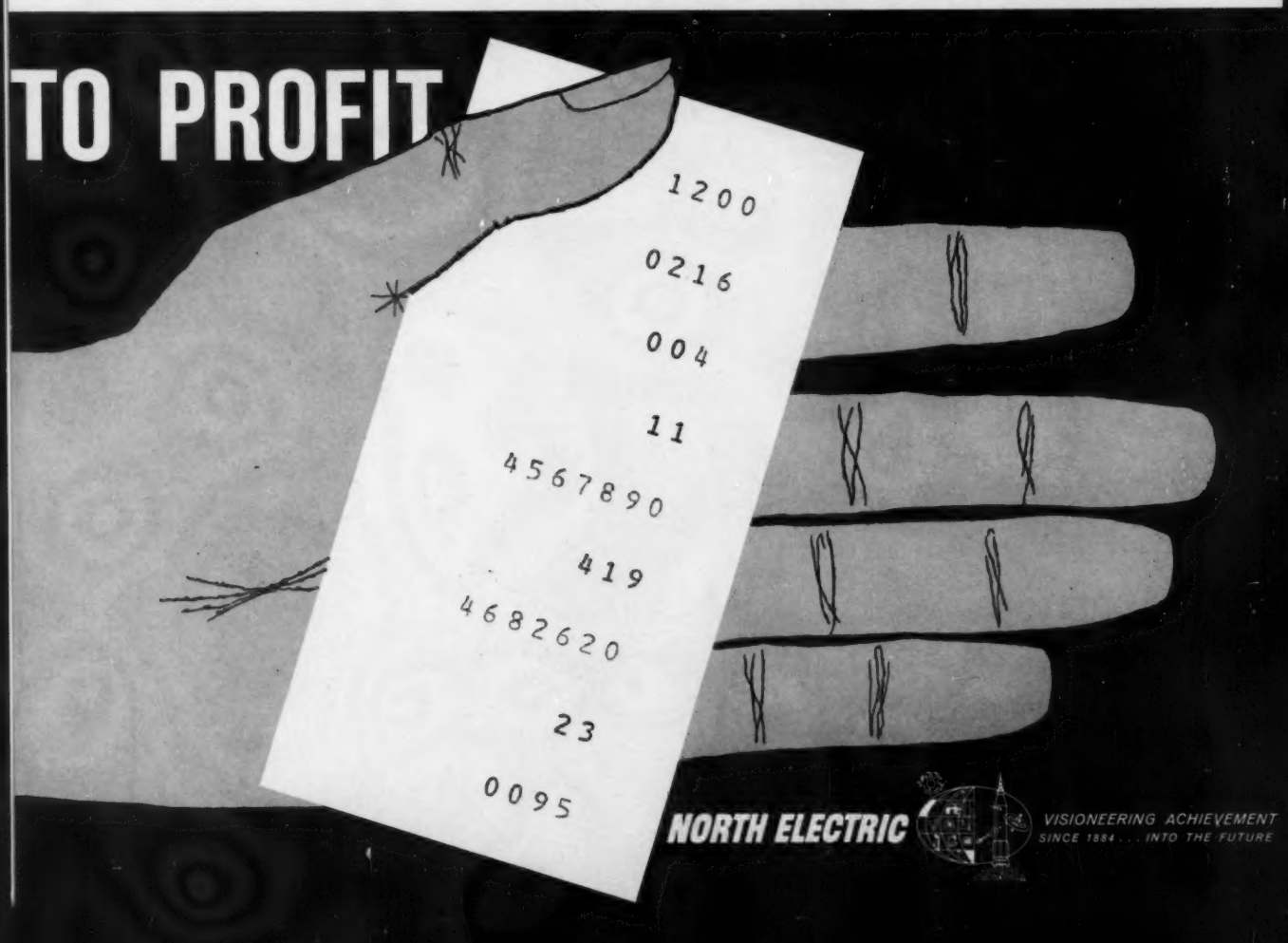
ICA To Build Near East Net In Turkey, Iran, Pakistan

The International Cooperation Administration (ICA) on Mar. 22 announced that a 3,060-mile telecommunications network connecting Turkey, Iran and Pakistan will be built as a project.

The Onan Division of Studebaker Packard Corp. has signed a 1.1 million-dollar contract to supply Radio Corporation of America with 267 generator sets and switch gear to power the 3,060-mile network in the Near East.

The three Central Treaty Organization (CENTO) host countries, it is reported, will provide the buildings to house the line's equipment and build whatever access roads will be needed.

Included in the network will be key stations which will also serve as maintenance and alarm centers, in Ankara,



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Teheran and Karachi, and 88 stations along the route, ten of which will have maintenance alarm equipment. The location of these stations will range from sea level to 9,000-foot elevation.

E. M. Blakeslee, Independent Executive, Dies

EDWIN MITCHELL BLAKESLEE, 61, chairman of the board and chief executive officer of General Telephone Co. of California died in his sleep of a heart attack on Mar. 23 at 5 a.m., at the Biltmore Hotel in Montecito, Calif., following a telephone company management conference.

Mr. Blakeslee became president of Associated Telephone Co., Ltd., on Mar. 1, 1947 and continued in that office when the name of the company was changed to General Telephone Co. of California on Jan. 1, 1953. He became chairman of the board on July 1, 1958.

Mr. Blakeslee was born in Savannah, Mo., on Feb. 14, 1901. He completed high school there and then went to Stanford University where he was awarded the degrees of bachelor of arts in mechanical engineering in 1922, and of master of arts in electrical engineering a year later.

E. M. BLAKESLEE

He went from Stanford to the Pacific Telephone & Telegraph Co. in San Francisco and then became associated with the California Railroad Commission (now the Public Utilities Commission). He joined the newly-organized Associated Telephone Co., Ltd., in Los Angeles in 1929.

A year later, Mr. Blakeslee was transferred to Madison, Wis. as connecting company agent for the Commonwealth Telephone Co., and became vice president in 1936. He was elected president of a newly formed east central group of the former Associated system companies operating in Michigan, Indiana and Kentucky in 1944. He held this position until his return to California, in 1947, as president of Associated Telephone Co., predecessor of General Telephone Co. of California.

Correction

In the photograph on page 55 of our Mar. 17 story on poultry auction bidding by telephone, the two men shown are incorrectly identified. Elmer Broders, American Telephone & Telegraph Co., is to the left, instead of the right. John Durrett, Southwestern Bell Telephone Co. design engineer, is at the right. Tom Paxton does not appear.

Reality

"If you are too busy to take an interest in government, feel that getting mixed up with politics is bad for your business or beneath your dignity, then at least take time for one thing . .. Teach your children to count in rubles." —SIDNEY YUDAIN, Washington (D.C.) *Roll Call.*

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join new strand or restore full mechanical strength to damaged or severed strand without cutting; permit spinner to ride over smoothly without adjustment; will flex with strand; safe, tool-free, quick and economical, with visible inspection. Available in materials completely compatible with the strand.
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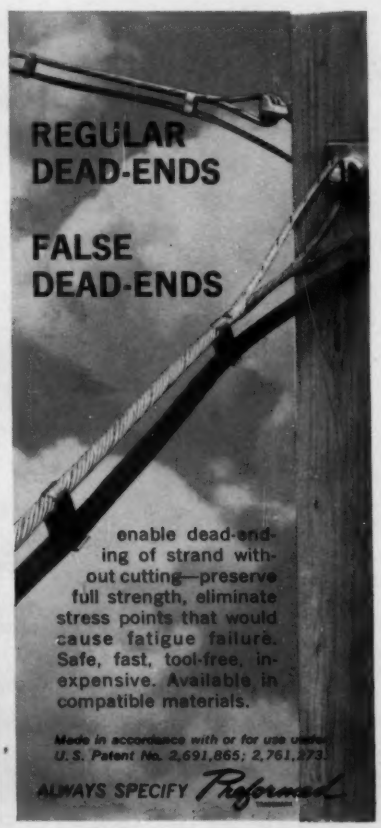
REGULAR DEAD-ENDS
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enable dead-ending of strand without cutting—preserve full strength, eliminate stress points that would cause fatigue failure. Safe, fast, tool-free, inexpensive. Available in compatible materials.
Made in accordance with or for use under U.S. Patent No. 2,691,865; 2,761,273.
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GOOD CONNECTIONS PAY OFF

Concluded from page 21

narrow down the choice of a soldering tool to one or two that, when equipped with the right tip, will be found to be practically tailor-made for a specific job.

What items should be included in a soldering tool "check list" in order to make it reasonably complete, and, therefore, as broadly applicable as possible?

The minimum data that should be included in a practical soldering tool "check list" are an itemization, of course, of that information that you are customarily required to insert in a standard purchase order form. These facts will be found set forth in the soldering tool section of the most recent catalog issued by your favorite telephone supplier or suppliers. They include all of the factors mentioned so far in this discussion plus such indispensable items as supplier's catalog number, quantity in standard lots or packages, and the date of required delivery.

The previously described approach is adequate for routine checks, but many of today's pressing soldering tool needs call for more comprehensive technical information, performance data, and detailed application advice than can be normally found in general catalogs. Most of this supplementary information and advice needed for more precise determinations can be readily obtained upon request from the leading manufacturers of soldering tools, solder, and closely allied accessories. A list of such helpful manufacturers is included in each annual edition of TELEPHONY's *Directory of the Telephone Industry*.

Do not hesitate to contact these and other reliable advisory sources, including neighboring telephone companies utilizing progressive plant practices. This should be done sufficiently far in advance of your actual need for this information to allow yourself adequate time to consider and otherwise make the most profitable use of the experiences of others.

Soldering Tool Care

Obtaining the right soldering tool for each job is one thing, keeping it in tip-top working shape at all times under all conditions is another. When soldering tools of any type are originally purchased, a suitable quantity of extra ones should be included for inventory to be held in reserve for normal replacement and for emergency use. This practice provides a "cushion" or factor of safety for unforeseen events which invariably have a nasty habit of cropping up at the most inopportune times.

In addition, those who do their own electric soldering tool repair work carry on hand extra replaceable heating element units, and cord sets, as well as a stock of assorted plain copper and the longer-life, coated or plated tips.

The care and upkeep of the soldering tool's copper tip, always considered to be a maintenance problem in the past, has been eased by the wider acceptance and use of clad, coated, or plated tips. These coated tips have a significantly longer service life and require less maintenance attention than their all-copper or copper-alloy counterparts.

It must be emphasized that there is no one "most" important step in the maintenance and care of soldering tools. Every step is as important as any other step. However, each solderer at least should be furnished with a set of the tip manufacturer's complete, official instructions for use —or their equivalent—for best results. When observing solderers fortified with such facts, equipped with proper tools chosen in the manner described in this article, you can then witness a basic facet of human nature in action: People generally like to do as good a job as they can possibly do.

Conclusion

It is the regular use of such orderly methods as have been briefly described in this report that characterizes the plant department that is organized to accomplish its work with reasonable dispatch and efficiency. Such a pacesetting outlook helps to build valuable employe morale which is essential for a stable, constantly improving departmental organization.

The statements in the above paragraph also mean something else important—something above and beyond the call of duty—namely, following such a progressive program gives the total plant effort a form of *built-in momentum of improvement* that furnishes a sound foundation for future growth. All telephone plantmen and craftsmen worthy of the name like to work—and do better work—in such an environment. It's worthwhile, therefore, if you have not already done so, to make plans to provide such working conditions.

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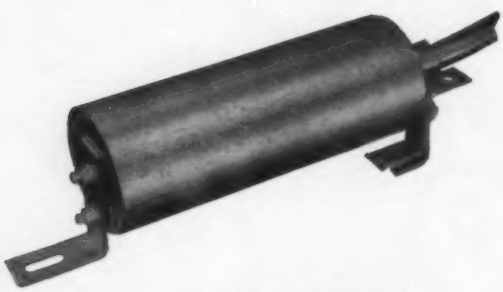

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SPACE COMMUNICATIONS

Continued from page 24

satellite communication system as described in the *Ad Hoc* Carrier Committee report.

Hughes Aircraft Co., in the Senate hearings described its Project Syncom by which it hopes to develop and control in orbit the first synchronous communications satellite. As a potential supplier of equipment to the communication satellite company, as well as a potential investor in the company, Hughes supported the Administration Bill, S. 2814.

The Department of State as well as the Justice Department strongly endorsed the Administration Bill.

The Federal Communications Commission courageously endorsed the advantages of regulated private ownership in the field of space satellite communications. The FCC raised serious doubts as to the desirability of non-carrier participation in ownership. Chairman Minow stated, "Permitting ownership of the corporation only by common carriers would give maximum assurance that its facilities and operations will be responsive to the communication needs of the public. It would facilitate the orderly integration of satellite facilities in the existing world-wide communication network. It would simplify the establishment of agreements and arrangements with foreign governments and entities who will share in the ownership and use of the satellite system. It would, finally, in our judgment, expedite maximum use of the system on a world-wide scale."

CWA for Private Ownership

By not supporting the Administration Bill, the FCC came closer to endorsing most of the *Ad Hoc* Carrier Committee's recommendations than any organization, other than the carriers themselves.

Mr. Minow concluded his statement before the House committee by stating, "Let me stress again that our privately-owned common carriers, under governmental regulation, have provided the nation with an unparalleled communications system, and may confidently be relied upon to fulfill the objectives of our nation's satellite communication program."

Joseph A. Beirne, president, Communications Workers of America (AFL-CIO), submitted a statement and testified before both committees regarding the union's attitude toward a proposed space satellite communication system.

He pointed out that CWA mem-

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SALES AND SERVICE IN PRINCIPAL CITIES

bers are employed throughout the Bell System, General System, AC&R and RCA, and by many other smaller, yet significant independent communications companies. He strongly backed the principle of limiting ownership of a communications satellite corporation to the regulated common carriers which are directly responsible to the public for rendering service.

Urges Fast Action

Mr. Beirne urged, "that this committee and the Congress do whatever is necessary, quickly, to give us a law establishing a privately-owned company, owned by the private carriers, permitting them to own their own ground stations, and permitting the carriers to commence negotiations with foreign companies or governments, so that circuits will soon be busy bringing people closer together."

These then are the principle measures currently being considered by Congress. For purposes of comparison, the accompanying summary has been made indicating the different approach found in several of the House bills.

At the time of this writing, Senator Kerr's committee is considering the testimony presented to that group. The committee has indicated that an amended version of the Kerr Bill—S. 2650—will soon be reported out by them. Representative Harris' committee is likewise considering the statement and testimony presented to that body.

Independents' Stake in Issue

In the meantime, Senator Kefauver has announced that the Senate Anti-trust and Monopoly sub-committee will hold hearings on the anti-trust phases of the control and ownership of the proposed space communications satellite system.

Current congressional consideration of a space communication measure is of significance and importance to all segments of the communication industry. The Independent telephone field will be involved no matter what type of legislation is enacted by the Congress. This is not merely the problem of the international common carriers nor of the larger companies in the communication field. The type of law enacted creating a space satellite communication corporation will affect virtually every Independent telephone company.

Next week's article will discuss the manner by which such legislation will affect Independent telephone companies.

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WHY SO MANY TELEPHONE SETS?

Continued from page 27

ment. As customers who now have older type sets in service, move to different locations and change to color sets, or wall-sets, or move to the outer transmission zones, it results in a larger surplus of older type sets, with fewer opportunities to reuse them.

The over-all effect of this change from the older sets to the newer varieties will vary with local conditions, but will generally account for almost two-thirds of the total purchases of new sets. The remaining one-third is primarily the result of the net gain in telephones. Thus, it becomes apparent why the current requirement for new telephone sets may well be as much as three times the total net gain. The need for the new sets is more directly related to the net increase in such items as color sets, black key-sets, black wall-sets, and black desk-sets of the newer type, than it is to the total net gain. That is why the old index of purchases to net gain is of little value in measuring the effectiveness of current set usage.

What then can be used as a good over-all of index of the effective control of new set purchases? The fact is that, with the nature of today's demand for telephone sets, there appears to be no one single factor that varies directly with the requirements for new sets.

It would seem that total inward movement should be of some value in measuring the requirement for new sets. However, the total sets used to take care of the inward movement will vary considerably with the company policy on left-in stations, and the amount of the left-in stations that can be reconnected without changing the instrument.

It also makes no allowance for changes in type of instrument, which is not generally included in the inward movement. Consequently, this would exclude such things as sets used for dial conversions, maintenance replacements, and sets changed to meet zoning requirements.

40% of Total Sets are New

Even with a fairly high percentage of reconnects, the total number of sets used, including both new and reused, is currently averaging about 1¼ sets per inward move. Approximately 40 per cent of the total sets used are new sets, and the remaining 60 per cent are reconditioned sets. In other words, the total new sets represent a ratio of around one-half set per inward move.

However, since the supply of sets recovered and reused is largely dependant upon the outward movement, this ratio of new sets to inward movement will vary a great deal with different percentages of total outward movement to total inward movement.

For example, over the past five years the ratio of new sets to total inward movement will show a variation ranging from .40 to .65, so this is not a stable index even though it does not vary quite as much as the ratio of new sets to gain.

Management Control Factor

Perhaps a more practical approach to the effective control of new set purchases is to take a look at the factors that are subject to management control. Certainly, we do not want to restrict the customer demand for color sets, key-sets, and even wall-sets, so the effect of these factors on new purchases will have to be accepted. However, since stock levels and total left-in stations have an effect upon new purchases, we can exercise management control over these items to be sure that they are kept at a practical minimum.

The left-in station item is a very controversial one. What to leave in, how long to leave in, or whether to leave in at all, are fundamental questions which seem to have a variety of economic answers. One factor that tends to confuse the issue is the fact that a high left-in station development results in a high percentage of reconnects, so it is assumed that this is economical.

However, a reconnect simply means that there was a telephone on the premises when the installer got there, and does not necessarily mean that he actually used it in providing the service.

Not All Mean Saving

If, in the majority of cases, the installer actually changed the instrument because the customer wanted a color set, or a wall-set, or the set was not in condition to be reused, then it is questionable whether the left-in station resulted in any saving to the company.

Of course, this will depend on rate structures to some extent, so that a

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left-in station policy might be different in those areas where there is a difference in installation charges between a reconnect, and a new installation.

Can Control Reuse

About the only other item that is subject to management control is the extend of reuse of the older type of desk-set. Since this set can only be used as a partial substitute for the newer type of black desk-set, even this control has only a limited effect upon total set purchases. Certainly, it must be recognized that the older set is not the equivalent of the newer set in either appearance or transmission, even in the inner transmission zone. While, from a strictly technical viewpoint, the older set is still serviceable, it is encountering an increasing amount of customer resistance. Consequently, management must decide whether it is willing to accept this customer dissatisfaction in order to minimize the capital requirements for new set purchases.

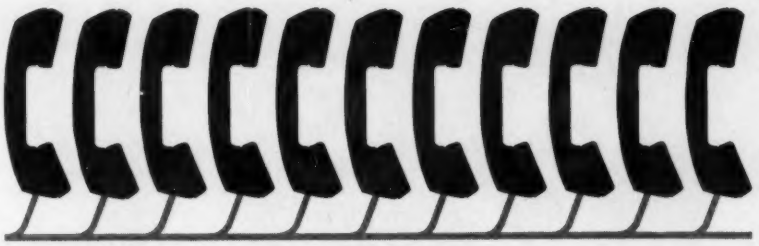
It appears, then, that regardless of what kind of an index is used to measure new set purchases, the effective control of set usage is limited to a few factors. If stock levels, left-in stations, and purchases of new regular black desk-sets, are kept to a reasonable minimum, then there is not much more that can be done to reduce the total purchases of new sets. Whatever requirement for new sets becomes necessary under such a program, must be recognized as essential to take care of customer demand. The fact that it does result in large quantities of surplus sets of the older types, must be accepted as a part of the cost of giving the customer the type of telephone service he wants.

Problem to Become Greater

As we look ahead to the new types of instruments being developed, we can only conclude that there will be an increasing amount of recovered sets that will no longer be acceptable for reuse. We crossed that bridge when we went down the road of an aggressive marketing program for telephone service.

The only problem remaining is to obtain the capital requirements, and to get from regulatory commissions recognition of the increased depreciation expense that is involved, so that the earnings can be maintained at a satisfactory level.

But prudent management still requires a sound policy of making as much use of the older types of sets as is practical, even though there will



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be some degree of customer resistance. At least, we have a good alternative solution to offer—payment of the small additional charge for a color set, and there is no problem.

Obituary

LESLIE J. GADDIS, 66, sales engineer for the Lorain Products Corp., died of a heart attack at his home in Chicago, Ill., on Mar. 31.

L. J. GADDIS

Mr. Gaddis had joined Lorain Products in the summer of 1960, following his retirement from Automatic Electric Co., where he had been employed for 50 years. His territory with Lorain was the 11-state Middle West area.

Mr. Gaddis went to work for Automatic Electric as an office boy, and completed his high school education at night. He later had a four-year course at Lewis Institute to further his training in electrical engineering.

During his career with AE, following shop assignments and work as an installer, he became a staff engineer in 1926. Later he served as sales engineer in the west and central districts of the company. He sold the first automatic toll ticketing installations in the states of Louisiana, Nebraska, Illinois and Wisconsin.

Upon his retirement from Automatic Electric, he was praised not only for his accomplishment in sales, but for the ideas he had contributed to the industry. He traveled widely over the country, and had many friends among telephone people.

Mr. Gaddis was a registered professional engineer of Illinois and a lifetime member of the Independent Telephone Pioneer Association.

He is survived by the widow, Elizabeth; two sons, Leslie J. Jr., and Richard A.; by six grandchildren, Robert, David, Donna, Linda, Rick, and Deborah; by two sisters, Laura Gaddis, and Mrs. Bessie Behl; and by two brothers, George and Elmer.

ICS Adds Seven Electronics Training Programs, Lab

The International Correspondence Schools has added seven more new electronics training programs—bringing the total to 18 new ones in 12 months. Among new courses added is one called Telephony, Electronics and Radio Communication.

Between the first Sputnik launching in the Fall of 1957 and the orbital flight of Astronaut John Glenn in February, 1962, International Correspondence Schools has made a "substantial investment in the complete overhauling, updating and expansion of its entire electronics program" ac-

Jack Holms, wire chief at the Susanville office of the Citizens' Utilities Co. of California, points out a Lynch carrier system installed 15 years ago by Frank W. Lynch, founder of Lynch Communication Systems Inc. to D. L. Oestreicher, manager of engineering for Lynch. This equipment has been operating since that time, providing toll service between Susanville and Redding, Cal.

cording to Joseph Risse, head of the new School of Electronics.

Known in 1957 as the School of Electrical Communication and offering nine programs mainly in the radio-television servicing field, the school has become the School of Electronics with a curriculum of 29 up-to-date programs geared to the needs of beginners, and advanced electronic technicians, as well as many engineers. Fifteen new texts have been written for ICS by electronics experts, with seven serving as replacements for books in use last year.

For the first time, an ICS Electronics Laboratory is available in three special kits featuring the ICS VTVM—a professional quality vacuum tube voltmeter to be constructed by the student at home.

It will provide practical experience for trainees taking two new courses, **Electronic Fundamentals with Electronic Equipment Training** and **General Electronics with Electronic Equipment Training.** These kits can be added to other courses, if desired by the student.

The other new studies include programs described by ICS as follows:

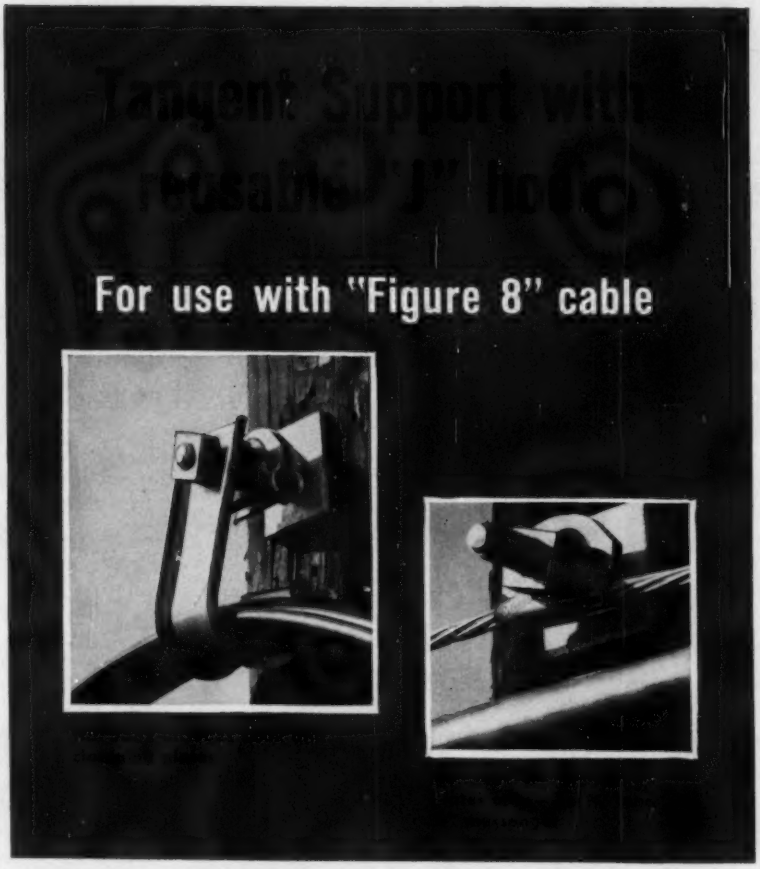
Telephony, Electronics, and Radio Communications (mentioned previously)—An outgrowth of the former ICS Telephony and Radio Communications Program, this instruction will now also prepare students to take the Federal Communications Commission Second Class Radio-telephone license exam required by many workers in the telephone field. Included also is instruction on computer, facsimile, data-processing, microwaves and so on.

General Electronics—A compact introduction to the subject at a technical level, suitable for those with electronics technician as a career objective; also valuable for draftsmen, technical writers, purchasing agents, estimators, salesmen and other nontechnical personnel who need a basic grasp of the subject.

Electronic Principles for Automation—For technicians already employed or persons who want to work on equipment designed for use in automated plants, or for automatic control processes; also, for those who require a general knowledge of the principles of basic science, instrumentation, control, data processing, computers, radio transmission and reception, facsimile and telemetering.

Electronic and Applied Calculus—For electronics technicians seeking job advancement, engineers needing to review electronic applications of calculus, technical writers, field service technicians and computer technicians.

Electronic Instrumentation and Servo



The Reliable all stainless steel Tangent Support No. 5582 can be used in either of two ways:

1. Leave the hook in place after installation.
2. Place the clamping plates on the through-bolt first and the "J" hook last in a reverse position. After tensioning and installation, remove and reuse the "J" hook. The lock-washer design embossed in the clamping plates assures a tight grip.

Rolled edges on the "J" hook positively prevent cable or strand damage. The clamping plates cannot bite through the webbing between strand and cable.

Convince yourself of its merits:

Reliable

A Symbol of Integrity Since 1909

ECTRIC COMPANY

Franklin Park, Illinois

Send me a sample of your Tangent Support No. 5582 with Installation Specification No. 116.

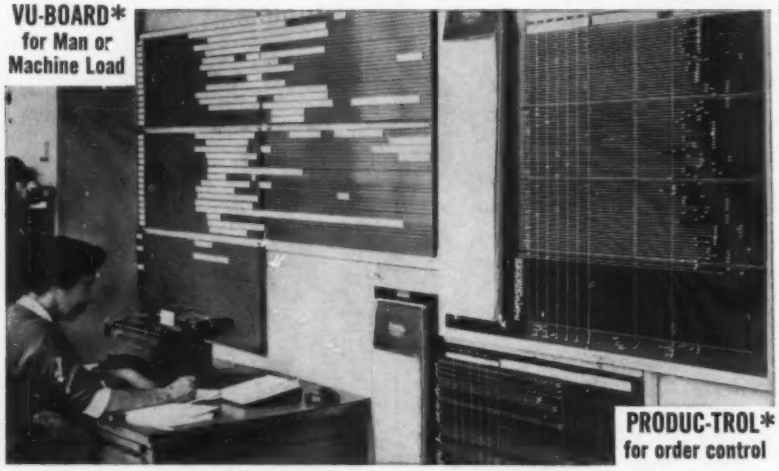
NAME_____ POSITION_____

COMPANY_____

STREET_____

CITY_____ ZONE____ STATE_____

Another Wassell Product



Wassell TWINS "Speed Up Operations" for two more top manufacturers

Top manufacturers of resistors:

"With Produc-Trol providing visible information on approximately 2,000 active open orders, we can now tell at a glance how the order stands within two hours of its actual movement through our manufacturing facilities."

Top maker of precision bearings:

"Produc-Trol and Vu-Board have made our production control far easier than at any time in the past.

"More accurate scheduling, both quicker and better planning, better customer relations are some of the benefits we've gained."

These are just two of over 30,000 top businesses which find Wassell visual control systems give the only comprehensive picture of all the vital factors at a glance. Thus, problems are anticipated, bottlenecks avoided, and sound decisions made.

Wassell Organization, Inc., pioneers of visual control, have trained representatives in sixty cities prepared to help you plan a visual control system which will save both time and dollars. Please look under Wassell in the phone book or use the coupon below.

* Each order promised on Produc-Trol is time checked by machine, man or department load on Vu-Board

WASSELL ORGANIZATION INC.
DEPT. T-4 • WESTPORT, CONN. • CAPITAL 7-4111 • EST. 1935

Please send me details on how your Wassell Twins – Produc-Trol and Vu-Board contribute to greater plant productivity.

NAME_____ TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

Some valuable, exclusive Wassell franchises are available. Please write for an interview.

Fundamentals—A practical program on electronics of particular interest to instrument maintenance group personnel, electro-mechanical service-repair technicians, manufacturer-representative sales or clerical personnel, draftsmen and beginners.

Industrial Electronics Engineering—For experienced technicians, engineering aids and engineers desirous of keeping up-to-date on the latest developments; the principal portions of this advanced course deals with the fundamentals of servomechanisms, printed circuit drafting and the applications of calculus to electronic theory and circuits.

Volume-Control Handset Announced by Bell System

A new volume-control receiver handset that fits any of its modern telephones has been announced by the Bell Telephone System (See cut.)

Bell states that the new handset was designed especially for people with impaired hearing. The new receiver looks like the handset on a regular telephone, but includes a tiny control device which permits anyone to adjust the loudness of incoming calls to the best listening level for him.

According to the Bell System, this is the first time that volume control can be applied to any of its current telephone models, including wall telephones and the Princess.

Described as useful in the office as well as in the home, this special volume-control handset can also be used on the Bell System's Call Director telephone and its familiar desk telephone.

Priceless Quality

Common sense is very uncommon.—HORACE GREELEY.

Wire Users please note . . .

COPPERWELD STEEL COMPANY'S BIMETALLIC WIRE HAS A

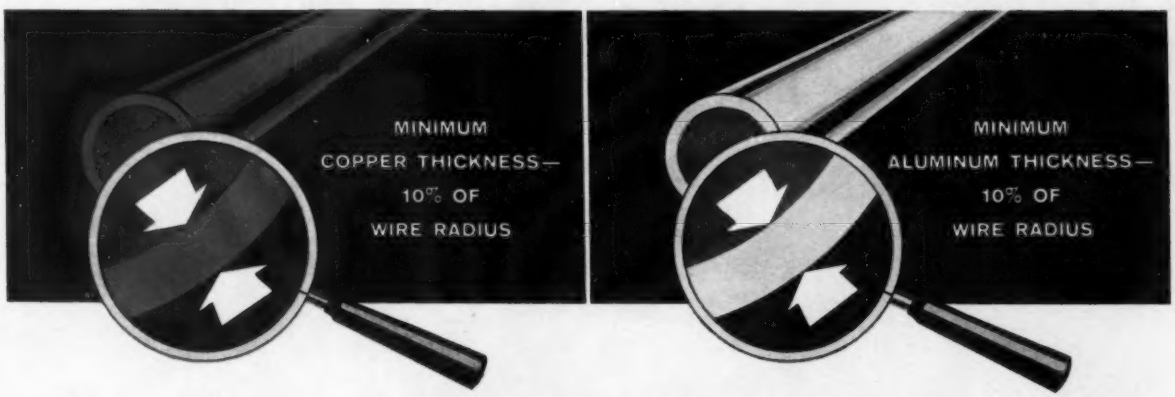
MINIMUM THICKNESS

OF COPPER OR ALUMINUM—

10% OF THE RADIUS

Copperweld®

ALUMOWELD®



Choose Copperweld Wire and you know that at least 10% of the wire's radius is pure copper—an advantage our customers have had for over 30 years! Choose Alumoweld Wire, our newest product, and you're sure that at least 10% of the wire's radius is pure aluminum—the heaviest thickness of aluminum on any aluminum-covered steel wire commercially produced today.

What does this mean to you? It means that you can't go wrong when you buy wire from Copperweld Steel Company—the World Leader in Bimetallic Wire. Whether you choose Copperweld or Alumoweld, you get a wire whose extra-thick corrosion-resistant covering is permanent, whose high strength and excellent conductivity remain unimpaired for the life of the installation.

Write us today for more detailed information about Copperweld or Alumoweld Wire and Strand.

COPPERWELD STEEL COMPANY WIRE AND CABLE DIVISION *Glassport, Pa.*

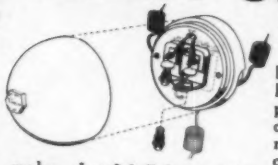
For Export: COPPERWELD STEEL INTERNATIONAL COMPANY, New York

STOCKED AND SOLD BY LEADING DISTRIBUTORS

TRANS TECHNION'S
FIBER GLASS
POLE LINE HARDWARE

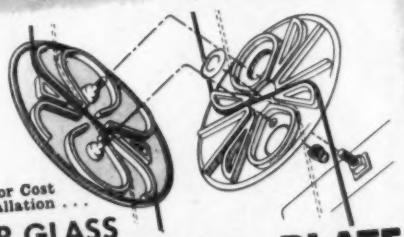
puts more years of service, reduces maintenance costs, in your plant . . .

FIBER GLASS
DRAIN UNIT



Practically Indestructible Fiber Glass Lasts Longer

All components are embedded in tough, lifetime Fiber Glass. Newest design permits drainage of induced voltages from communication lines with loss of only 0.2 db at 1,000 cycles. Just 0.1 db loss at all carrier frequencies up to 600,000 cycles. Reduces induced voltages, protects carrier equipment, reduces static noise, protects subscribers from electrical shock, protects central office equipment, the telephone instrument and the ringer. Weatherproof, corrosion-proof and vandal-proof! Test a Trans Technion Fiber Glass Drain Unit on your circuits for 30 days at our risk. For full information and actual sample, just mail the coupon below.



Less Labor Cost Per Installation . . .

FIBER GLASS
TRANSPOSING PLATE

Guaranteed shatterproof, even against rifle fire, the Trans Technion Fiber Glass Transposing Plate actually encapsulates wires at the critical point of transposition. Gives you higher dielectric values. Field tests on a 20 mile circuit resulted in 19.22% less line loss in wet weather than an adjacent identical circuit transposed with the conventional bracket. Transpose left over right, right over left—on the crossarm, top of pole or in the span. Can't flop over in high winds. Threaded boss at base fits single 5/8" x 6" bolt thru crossarm. Ask for a free sample Transposing Plate by sending off the coupon below.

Dear Sir:

Please send sample ☐ Drain Unit, ☐ Transposing Plate so that we can test on our own circuits, without cost or obligation.

Also send complete information, wet weather dielectric test results, specs and installation instructions on ☐ Drain Unit, ☐ Transposing Plate. Thank you!

NAME .....

ADDRESS .....

CITY ..... STATE .....

TRANS TECHNION, INC.

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Minneapolis 8, Minnesota
Phone TA 8-8535

Trans Technion Products are marketed under the name **TOPO LINE**

YOU ASKED FOR IT!

Similarity Ends Here

MODEL 538-A

TRANSISTORIZED HIGH SPEED TELEGRAPH RELAY

Model 538-A has indefinitely long life — requires no maintenance or adjustments. It is a direct electrical and mechanical replacement for WE 255A Polar Relay used in Teletype machines and Central Office Telegraph repeaters. It upgrades and **increases reliability and speed** of associated equipment. Purely resistive input and complete isolation between input and output circuits permits any number to be used in series on the same signalling circuit. Switching capabilities rated up to 500 volts DC and up to 2 Amperes at 100 watts.

Write for Technical Data Sheet 538-A

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SOLID STATE ELECTRONICS FOR TELECOMMUNICATIONS
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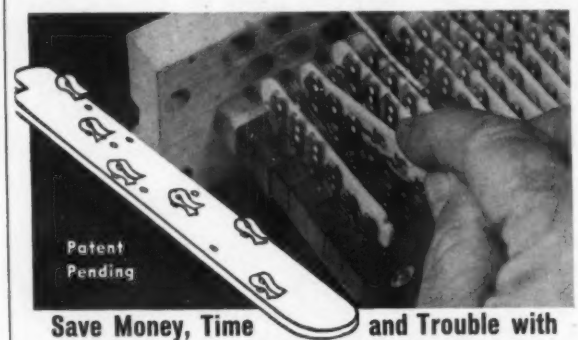
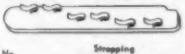


Save Money, Time and Trouble with

Monarch INTERCEPT CONNECTORS

S to S1 · R to R1 · T to T1
(Straight)
"YELLOW"
Part No. SY-100

S to S1 · R to T1 · T to R1
(Reactive)
"RED"
Part No. SR-200



Part No. SG-300

Strapping		
Rear	Center	Front
C-C1	T-T1	R-R1

NEW "GREEN" MONARCH INTERCEPTOR CONNECTOR
Especially designed for Automatic Electric Main Frames

MATERIALS: PLASTIC – Hi Impact Thermo Plastic
SPRING – Stainless Steel, Type 302.

PACKAGING: PACKED – 80 per box, 1040 per carton.

GUARANTEE: GUARANTEED to operate satisfactorily

TESTS: Each Intercept Connector – Individually tested for continuity

FOR FURTHER INFORMATION CONTACT
MONARCH MOLDING, INC.
120 Liberty St., Council Grove, Ks., Phone No. 99

Wallace Appointed to Post In Hawaiian Company

Merrill G. Wallace, former Bell System rate planning engineer, has been appointed director of revenue requirements for Hawaiian Telephone Co., Honolulu, D. S. Guild, president, has announced on March 28.

M. G. WALLACE

Mr. Wallace succeeds Louis D. Hinton, who joined the United States Independent Telephone Association's staff in Washington, D. C. as settlements coordinator.

A native of Omaha, Neb., Mr. Wallace joined the Bell System in 1919, and served in various operating companies in the Midwest. In 1934, he was appointed to the Long Lines Division of the Bell System, and in 1960, was named rate planning engineer in the planning and development department in New York City.

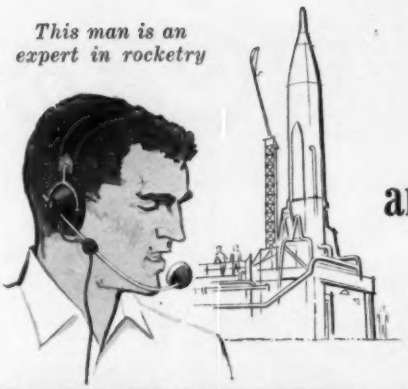
Larabee ITT Sud America Head, S. A. Area Manager

The election of Stephen H. Larrabee as president of ITT Sud America, and his appointment as deputy area manager for the ITT System's South American region has been announced by Harold S. Geneen, president of International Telephone & Telegraph Corp.

Reporting to Ted B. Westfall, ITT

National Society for
Crippled Children and Adults
2023 W. Ogden Ave.
Chicago 12, Ill.

This man is an expert in rocketry

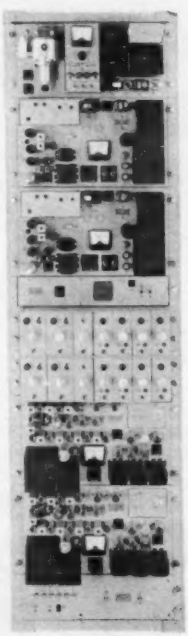


...and in Low and Medium Density Communications BUDELMAN is the

specialist

Result: Only BUDELMAN Builds the Complete Package...

reliable, economical, compatibly designed Radio and Speech Multiplex Systems for most systems requirements



Whatever your microwave need up to 60 channels, Budelman has the economical method of filling it.

- Type 14CW-2KMC Microwave Links for short-haul gap fillers or multi-hop repeater trunk circuits . . . Straightforward design and engineering . . . no Klystrons or other critical components or circuits . . . virtually *trouble-free*. 14CW links and 49A multiplex modules were designed for use together . . . *prove in* where other makes cannot.
- Type 14BN/BW-960MC terminals — your best buy for "thin-route" multiplex radio systems and spur circuits . . . for base station control, telegraph and telemetering. Low-cost companion 450MC equipment also available for multi-channel speech circuits.

● *FREE Spec File on request*

BUDELMAN ELECTRONICS CORPORATION

375 FAIRFIELD AVENUE — STAMFORD, CONNECTICUT

BUDELMAN bec

A subsidiary of General Railway Signal Company

vice president and area general manager for Latin America, Mr. Larrabee will have over-all administrative supervision of ITT Sud America's telephone operating subsidiaries in Chile, Brazil and Peru, as well as ITT System manufacturing and radio companies in Argentina, Brazil, Bolivia and Chile.

With headquarters in Buenos Aires, Argentina, Mr. Larrabee will also be responsible for South American operations of All America Cables & Radio, Inc.

A native of Scarborough, Me., Mr. Larrabee joined ITT in 1927 and was named assistant vice president of the corporation in 1960. He has spent nearly 35 years in executive positions with ITT affiliates in Latin America, where he has close financial and government associations.

Mr. Larrabee's previous responsibilities in South America have included assignments as regional comptroller for ITT operations in South America, and as financial member of a five-man advisory committee for the Argentine State Telephone System. He also had been president of ITT's Virgin Islands Telephone Corp. and vice president of the Puerto Rico Telephone Co.

Since 1952, when he was named assistant comptroller of ITT, Mr. Larrabee has been active in the management and development of the corporation's telephone and radio operating subsidiaries in South America, including the Chile Telephone Co., which he serves as a director.

He is a graduate of the Bentley School of Accounting and Finance in Boston and is a member of the Telephone Pioneers of America.

Howard Housley Retires From Automatic Electric

Howard L. Housley, communications sales representative for Automatic Electric Co. retired on Apr. 1, after 28 years with the company. He has served Automatic Electric Sales since 1934 as a sales representative, district manager, and staff engineer. Except for one year in Chicago, Mr. Housley has made his home in Dallas, Tex.

H. L. HOUSLEY

During these years, he has become an authority on oil field communications. This is attested to by his election to the presidency of the Petroleum Supply Association in 1953 and board chairmanship in 1954. Housley has also been president of the Texas Chapter of the Independent Telephone Pioneer Association from 1948 to 1950, president of the North Texas Chapter of the Armed Forces Communications and Electronics Association in 1955, and its board chairman in 1956. He is active in the Dallas Engineers club, Dallas Electric club, American Institue of Electrical Engineers, and Telephone Pioneers of America.

Prior to going to AE, Mr. Housley had many years of experience with telephone operating companies. From 1928 to 1933 he was operations

NEW!

POW-R-SPADE®

SELF-PROPELLED TRENCHER

MODEL 7200

Rugged, trouble-free POW-R-SPADE digs down to 6 ft.!

Yes, this larger self-propelled POW-R-SPADE is new . . . to you. But to the engineers and development people at Stampings Inc. it is several years old. During that time this new machine has been severely tested and proved. Now we can offer a larger size POW-R-SPADE confident that it will stand up under toughest digging conditions. Every part is designed and constructed with an extra margin of ruggedness and strength to eliminate breakdown possibilities. Model 7200 digs to 6 ft. deep in widths of 4 and 6 inches; 8 and 12 inch widths to proportional lesser depths.

Built-in towing bar for moving to the job behind car or truck. No trailer is necessary. Four digging speeds up to 15 ft. per minute depending on soil

◀ AMERICA'S MOST POPULAR LIGHTWEIGHT TRENCHER

This is the machine that has won the loyalty and respect of users all around the country since its introduction in 1956. Today there are more in use than any other in its class. Recommended for trenching to lay cable, conduit, pipe, tubing where 3" width by 24" depth is sufficient. In the words of satisfied users . . . "a labor saver, easy to operate, and profitable."

Model 1902. Digs 3" wide to 24" deep or 4" wide to 18" deep. Light weight, compact, portable. Digs 1½ to 17 ft. per minute depending on soil conditions. Digs straight, curves, or angles. One man operation from start to finish. Shipped completely assembled.

For Details and Prices

WRITE TO:

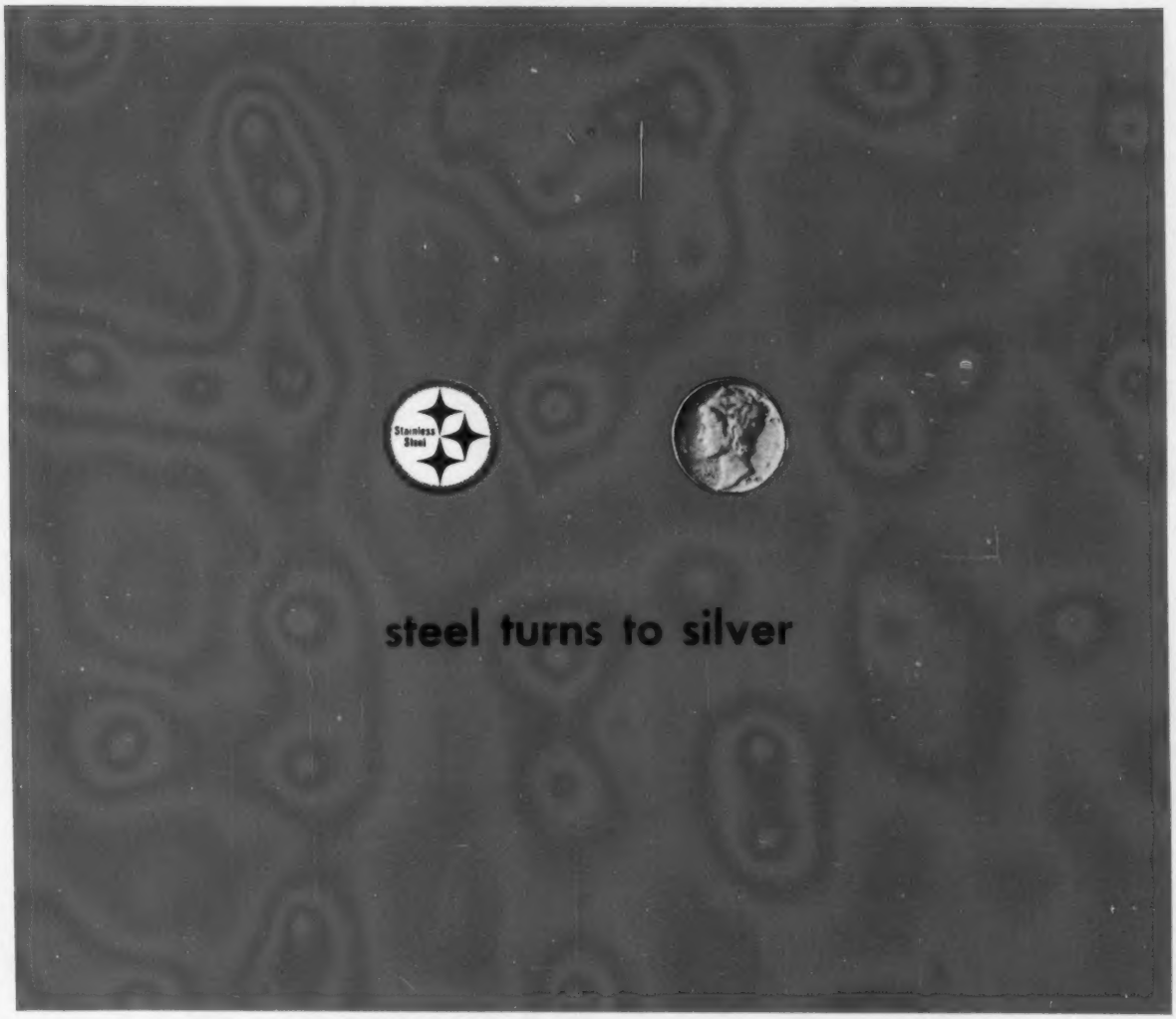
STAMPINGS, INC.

Dept. N Rock Island, Illinois

OR TELEPHONE COLLECT:

Rock Island, Illinois

788-9527

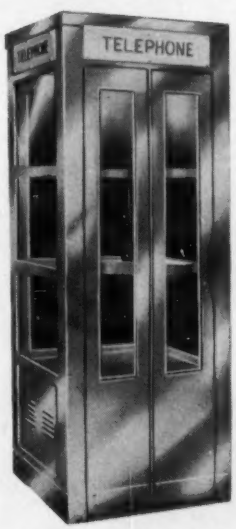


...in Sherron telephone booths

One sure way to promote paystation patronage is to provide attractive telephone booths.

Sherron stainless steel booths . . . bright, clean, gleaming . . . more than do justice to any location.

Impressively beautiful, they actually take on a richer glow with the passing of time. Wiped clean in mere minutes, they weather the worst of weather, grime, climate and time without a tell-tale sign.



Hard to dent, scratch, knick or crack, they retain their glow and good looks, year after year after year.

They never wear out their welcome.

SHERRON METALLIC CORPORATION
1201 FLUSHING AVENUE
BROOKLYN 37, NEW YORK

THERE'S A SHERRON BOOTH FOR EVERY LOCATION AND BUDGET IN "GOLD," STAINLESS STEEL OR COLD ROLLED STEEL

vice president for the Municipal Telephone & Utility Co., Kansas City, Mo.

Born in Osceola, Mo., Mr. Housley moved to Kansas City, where he attended high school and the Kansas City School of Law.

Mr. Housley was honored at the recent convention of the Texas Telephone Association, when the Dallas representatives of telephone manufacturers and suppliers presented him a watch during the convention banquet.

The watch was presented by K. H. Benninghoven, regional manager of ITT Kellogg, who told Mr. Housley that, while they were probably setting a precedent by "competitors recognizing another competitor" in such a manner, the Texas representatives were giving him the watch as a token of their esteem and in appreciation of the "competitive fellowship and personal friendship" they had enjoyed with him over the years.

GD/T Names Norris Industrial Sales Engineer in Atlanta

Frank H. Norris has been appointed as an industrial sales engineer in the Atlanta branch of General Dynamics/ Telecommunication, according to an announcement by R. F. Fairly, general manager of commercial sales.

F. H. NORRIS

Mr. Norris will serve major industrial and government procurement agencies in the Southeast under the direction of W. L. Mollands, Atlanta branch sales manager. He will be responsible for the sales of Stromberg-Carlson telecommunication equipment and components, including carrier/microwave systems and supply items. He will also assist Independent telephone companies with their PBX sales programs.

Mr. Norris began his communications career with the Western Electric Co., at Kearney, N. J.

He was later associated with the Peninsular Telephone Co., of Tampa, Fla., where he had considerable experience in preparing specifications for the use of XY Dial equipment, in both central office and commercial applications. Most recently, he served as a marketing and sales engineer with the General Telephone Co. of Florida.

His military service includes tours with the U. S. Navy and the U. S. Air Force, and specialization in radar and electronic control systems. He became interested in special communication application engineering while on Strategic Air Command Stanboard team designing Air Force control centers. He has also taught classes in telephony and electronics.

Mr. Norris was born in Washington, D. C., but spent most of his youth in St. Petersburg, Fla. He attended the University of Maryland and majored in engineering.

Leyse Retires After 39 Years With Kennecott Wire & Cable

Carl G. Leyse, assistant factory sales manager of the Kennecott Wire & Cable Division of The Okonite Co., electrical wire and cable manufactur-

CONCRETE
and CINDERBLOCK

ERODE

unless they're
protected with
KWAL-KRETE

KWAL-KRETE is the paint developed specifically to protect, waterproof and beautify new and old concrete and cinderblock structures. In a recent survey of users, 99% rated KWAL-KRETE "excellent".

KWAL-KRETE
is used and approved in the communications industry—by leading telephone and telegraph companies from coast to coast, and by such firms as General Dynamics / Telecommunication, Division of General Dynamics Corporation.

Get the KWAL-KRETE story in the KWAL-KRETE Kit.

MAIL THIS COUPON TODAY!

KWAL PAINT

PROGRESS IN PAINT

Please send me your free KWAL-KRETE Kit.

NAME .....

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ADDRESS .....

CITY ..... ZONE ..... STATE .....

Mail to: Kwal Paints, Inc., 800 Water Street, Denver, Colo.

ing subsidiary of Kennecott Copper Corp., retired Apr. 1, after 39 years of company service.

A native of Sioux Falls, S. Dak., Mr. Leyse attended the University of South Dakota. He was first employed as a sales representative by the Interstate Fruit Co. of Sioux Falls, and following that all of his business life was spent in the wire and cable industry.

Leyse was for a short time a salesman for the Central Electric Co. of Chicago, but in 1923, became a salesman for the American Electrical Works in the Chicago office. This company was purchased by the Kennecott Copper Corp. in 1935, and became the Kennecott Wire & Cable Co., with whom Leyse continued to be associated.

C. G. LEYSE

In 1940, Leyse went to St. Louis where he was the Kennecott Wire & Cable specialist for the Chase Brass & Copper Co., the selling agent for KW&C products.

In 1948, he became manager of utility sales and assistant general sales manager of KW&C, operating from headquarters in Phillipsdale, R. I. When The Okonite Co. was purchased by Kennecott Copper Corp. in 1958, KW&C became a division, of which Leyse was assistant sales manager.

Plan Iran-Pakistan Microwave System

Pakistan will soon have a microwave link with Iran, B. K. Nazir, Pakistan's general manager of telecommunications, reported on Mar. 13. This will be the first microwave system in Pakistan.

It will include a link between Pakistan's capital, Karachi, and Zahidan, Iran.

He also reported that a direct dialing system would be introduced shortly between Karachi and Hyderabad, India.

Western Electric and Kellogg

Hi Folks!
Here are some of our guaranteed rebuilt instruments that look and operate like new. Also, our New Test Set. Drop me a line for quotes and our catalog.

No. 500 TELEPHONES

Wall or Desk Models

Factory Reconditioned Instruments equivalent to New with a full Guarantee and Refund Privilege. New Black Cases, Cords, and many new-surplus parts, including Cycle Ringers now available. Shipped 10 per carton, and we pay the freight to your door on an order of 20 or more.

PRICE $14.50—Dial Blank; or with Dial, Less Ringer (install your cycle)
PRICE $17.50—With Dial and Straight Line Ringer
PRICE $19.50—With Dial and Cycle Ringer—Harmonic, Synchromonic, Decimonic

BECO'S #1011 RUBBER TEST SET

LOOK NEW!!

Equipped with a Standard W.E. Dial and Components, Nylon Cord, Piercing Test Clips and Special Belt Snap. Rugged and Dependable.

PRICE $27.50

W. E. 354 WALL and W. E. 302 DESK TELEPHONES

Self-Contained Sets with the appearance and operation of a new unit, equipped with Straight Line Ringer, or most Cycles can be supplied.

PRICE $10.50—Dial Blank C.B.
PRICE $12.50—With Met. Dial

LATE COMPACT MAGNETO TELEPHONES

Stromberg-Carlson, Leich and Kellogg

We have a limited quantity of these late strong alnico generator type sets for those long rural lines. Reconditioned and ready to go. (Please state second choice.)

PRICE $17.50

BOHNSACK EQUIPMENT CO.

Germantown, New York LEhigh 7-6213

FOR MAXIMUM SAFETY
use
"PROTECTO"
Plastic Guy Protectors

"DRESS UP THAT GUY"
with Permanent Safety COLORS
"CAUTION" — Yellow
(Standard)
"SUBURBAN" — White
(Standard)

New
Combination
Design

IT FEEDS THRU
(side opening)
OR
IT SNAPS ON
(center opening)

IT FITS ANY
SIZE GUY ¼"-½"

MADE OFF CENTER
SO AS TO SNUG UP

FITS OVER A
PREFORMED
DOWN TO A
STRANDVICE
OR 3-BOLT
CLAMP

7 & 8'

- FLEXIBLE
- PERMANENT COLOR
- NON-CONDUCTIVE
- WEATHER and TEMPERATURE RESISTANT
- WILL NOT BURN, RUST or DENT
- HIGH IMPACT STRENGTH at —20°F.
- PERMANENTLY SECURED with NON-CORROSIVE CLAMPS
(4 Clamps Furnished with 8' Protector)

TRADEMARK

PROTECTO PLASTIC PRODUCTS CO.
P. O. BOX 9 SALES ENGINEERING FAIRFIELD, IOWA
TELEPHONE 472-3545

Altec Lansing Announces Promotions for Three Men

Altec Lansing Corp., Anaheim, Cal., recently announced the appointment of two new vice presidents in marketing and finance and a new assistant marketing director.

H. S. MORRIS

H. S. Morris, formerly marketing director, has been named vice president of marketing, and C. R. Rininsland, controller, has been appointed vice president of finance. W. H. Johnson, formerly manager of engineering and technical information, has been appointed assistant marketing director.

C. R. RININSLAND

Mr. Morris was initially an engineer with Electrical Research Products, Inc., a subsidiary of Western Electric Co., and also the predecessor of Altec Lansing Corp. He progressed from service engineer, superintendent of technical inspection, merchandising manager, and sales manager before he took over as marketing director in 1961.

Mr. Rininsland also began his career with Western Electric and Electrical

No battles against the weather. No long, time-consuming, costly on-the-scene searching for line shorts, grounds or opens. Just sit back, let your coffee warm you against the storm outside ... and find the exact site of the line problem ... with the Sierra 124A Line Fault Analyzer.

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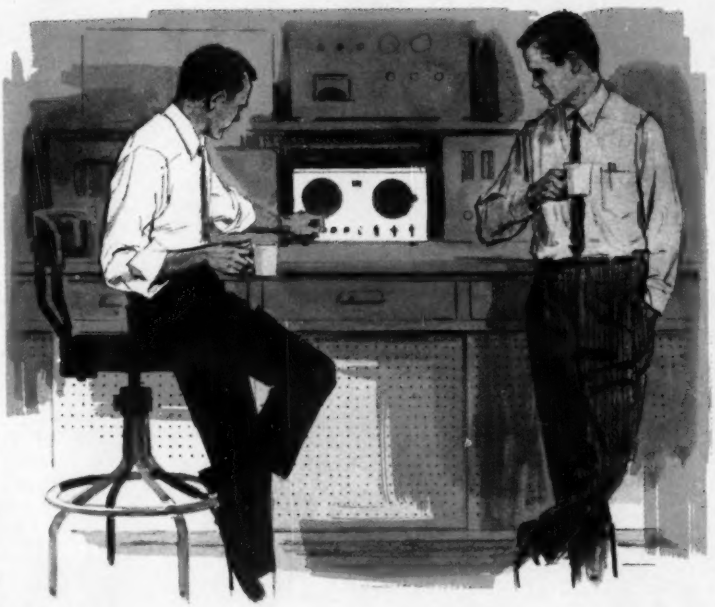

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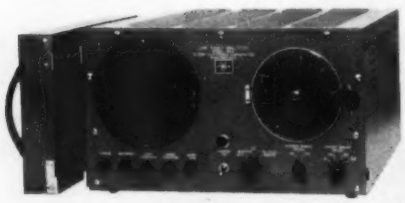

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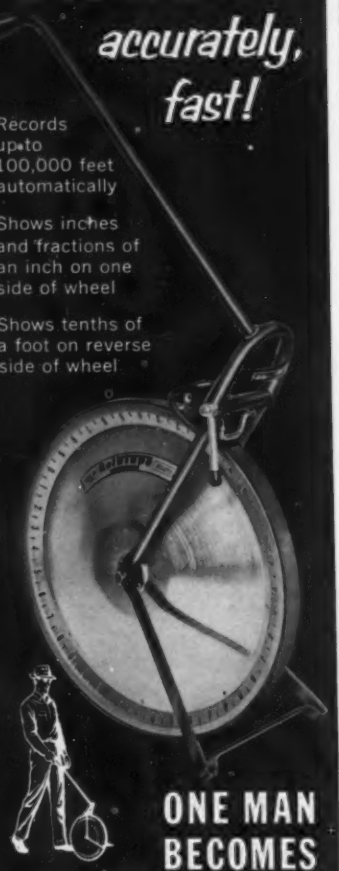

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Research Products, Inc., in the capacity of cost accountant. He also has been accounting supervisor and tax accountant before he became controller of both Altec Lansing Corp., and Altec Service Co., in 1957.

Mr. Johnson was mid-western sales manager of Altec Lansing, with headquarters in Chicago, before being transferred to Anaheim. A graduate of the University of Wisconsin, he worked as chief of communication engineering for Webster Electric Co. and was sound systems design consultant on special assignment with International Harvester before joining Altec.

Copperweld International Names Friend Engineer

Copperweld Steel International Co. has announced the appointment of Sidney Friend Jr. as electrical engineer. He will make his headquarters at 225 Broadway, New York City.

SIDNEY FRIEND JR.

Mr. Friend, a graduate of Swarthmore College, also holds a degree in electrical engineering from Columbia University.

After 10 years with Anaconda Wire & Cable Co., he served as apparatus engineer for Hubbard & Co., and as staff manager, electrical conduits, for Johns-Manville.

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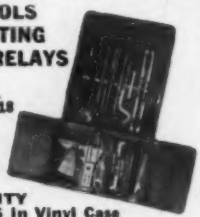

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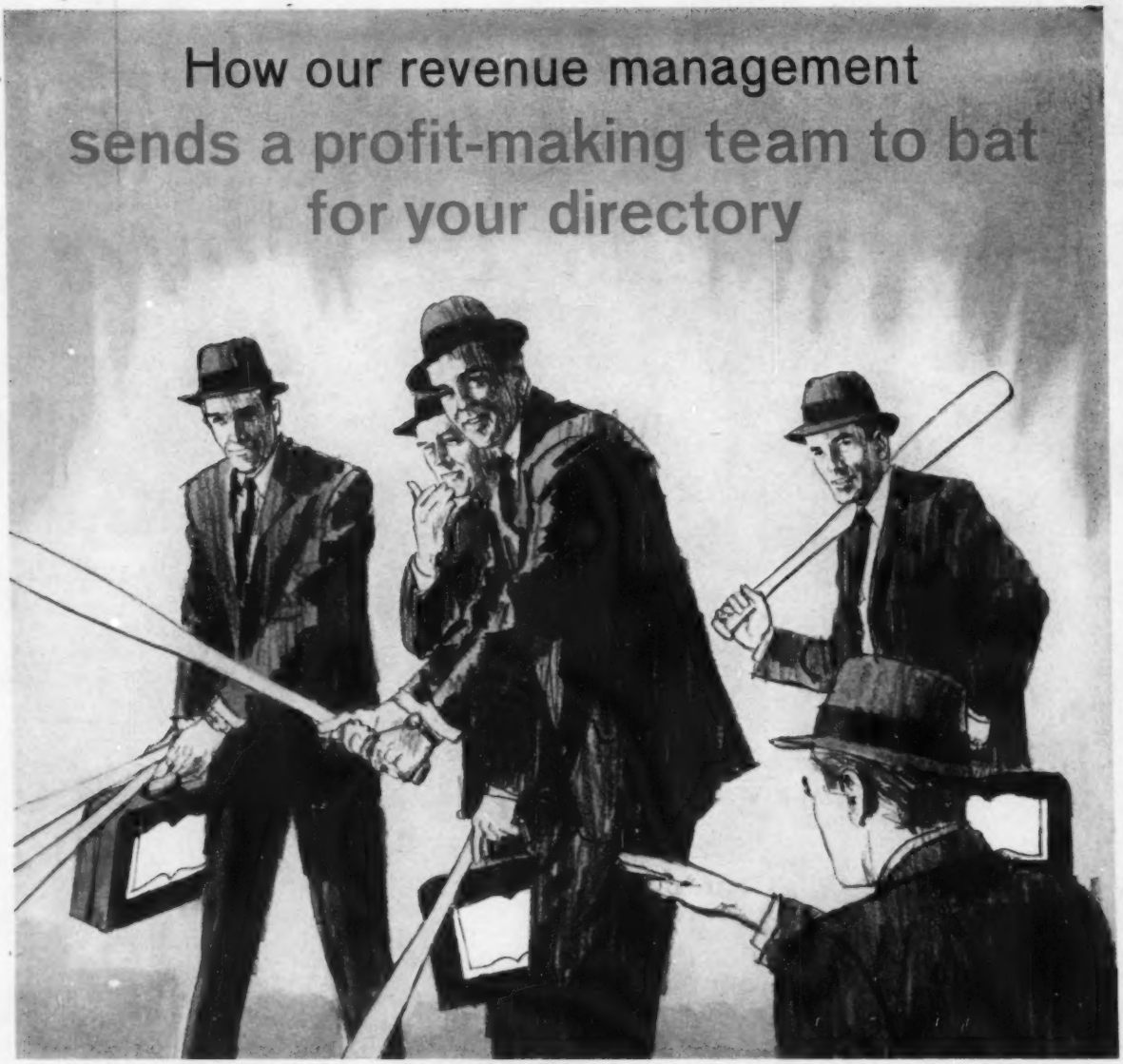

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